

Exploring the Caring Incorporating Yoga Program in Promoting Physical Recovery of Stroke Patients in Acute Phase

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Abstract

Background: Currently, caring science integrating cultural practices has become an important health resource to get positive health outcomes for hospitalized acutely ill patients. Yoga, a cultural practice, has the power to bring multiple physical improvements among chronic stroke patients. The purpose of the study is to analyze the experiences of participants focusing on their roles and perceptions of the power of caring incorporating yoga to promote physical recovery among stroke patients during the acute phase.

Methods: The study is a part of action research entitled "Development of a Caring Model Incorporating Yoga for Promoting Physical Recovery and Wisdom of People Living with Stroke". Purposeful sample was used to select the participants of 16 nurses, 16 stroke patients and their family caregivers. Data was collected using semi-structured interviews guideline and continues until data saturation in a neurology unit of a university hospital, Nepal. An inductive content analysis approach was used for data analysis.

Results: Three main themes and 9 sub-themes were emerged from the qualitative data in terms of experiences of the participants on the program. The three main theme included "caring as a tool to develop trusting relationship"; "yoga as a practical and powerful tool for physical recovery of stroke patients during acute phase"; and "perceived physical recovery as a result of the caring incorporating yoga intervention".

Conclusions: The finding of the study shown that that nurses can successfully facilitate early physical recovery of stroke patients using caring incorporating yoga during their acute phase. As yoga is well accepted by Hindu stroke patients due to it being culturally congruent with their sociocultural background, it may be effective for physical recovery and healing of the whole person.

Background

Despite advancement in medical technology and modern medicine in prevention and management of cardiovascular disease, stroke is still the leading cause of death and disability globally with high incidence and worse prognosis, particularly in developing countries [1]. including Nepal [2]. It poses significant effects on a person in terms of physical, functional, psychological, emotional and spiritual health as well as increased economic burden to the society [3]. Therefore, timely and proper management in each phase of stroke care is equally important for getting positive health outcomes [4].

In order to achieve a faster and greater proportion of recovery in stroke patients, rehabilitation interventions should be started as soon as possible after the onset of stroke if the patient is medically stable [5]. In acute phase, improvement in physical function and capability in activity of daily living are the main concerns and needs of stroke patients and their families [6, 7]. In this regard, conventional physical therapies have the main goal of maximizing functional ability [8, 9]. In contrast, stroke patients also develop extreme levels of negative emotions [10] along with high level of functional dependency [11, 12]. They have poor knowledge and understanding about the reality of stroke life [13], lack skill in self-care to overcome the challenges caused by stroke [14], and have poor adjustment to the sense of new life

[15], with high caregiving burden in acute phase of disease and until 3–6 months post stroke[16]. In addition, poorly managed stroke in acute stage lead to higher possibility of living with unresolved physical problems and uncertainty that deeply changes the client's life in long term [17]. The abovementioned situations impacted negatively in motivation and meaningful participation in rehabilitation intervention and in gaining independence in physical function in terms of activities of daily living, which results in long-term dependency on family members [12]. Many stroke patients felt boredom, disempowerment, frustration, and fatigue while doing conventional physical therapies [8], which may overwhelm the ambition of active independent participation in rehabilitation. Thus, a new model of rehabilitation program can motivate patients to successfully maximize recovery of physical function [18, 19].

Lately, basic caring integrating culture has been proved to be crucial and worth paying attention as important health resources for hospitalized acute and chronically ill patients in maintaining and promoting health. Caring is the main essence of nursing that manifests in nurses' action and behaviors through building a nurse-patient relationship [20]. Researchers claimed that the concept of caring and spiritual practice if paired together acted as a powerful tool that has the potential to create good caring relationship among nurse, patient and family [21]. Through caring relationship, active communication, information [22] and caring atmosphere were created that promote self-care ability, confidence, coping and holistic wellbeing of patients [23] and facilitate healing process even in a critical stage of illness [21, 24, 25].

Yoga is a popular spiritual mind-body practice based on the Hindu tradition [26]. It has become a popular practice for health maintenance and illness recovery in the global community [27] and is the way of life and cultural heritage in Nepal [28]. Yoga has many physical exercises with highly positive significant effect on stroke rehabilitation [29, 30], through enhancing neuroplasticity and neural pathways [31] that could enhance functional ability [32]. In addition, it also incorporates physical, mental and spiritual elements which have the power to integrate and balance among body, mind and spirit of an individual's health in various illnesses [33, 34] that enhanced motivation, positive attitude, and activity participation [35, 32] and high adherence to the program [36] which were lacking in conventional rehabilitation therapies [37]. Therefore, considering the caring incorporating yoga intervention can be a tool to promote physical improvement and ability to do self-care among stroke patients in the acute phase. The study aimed to analyze the experiences of participants focusing on their roles and perceptions of the power of caring incorporating yoga to promote physical recovery among stroke patients during the acute phase.

Methods

Study Design and Settings

The study is a part of an action research entitled "Development of a Caring Model Incorporating Yoga for Promoting Physical Recovery and Wisdom of People Living With Stroke in Nepal" that will be published later elsewhere. Action research approach allowed an extended period of face to face interaction between

nurses and patients where caring incorporating yoga could be successfully implemented. The study was conducted in a university hospital, Nepal.

Participants

The participants of the study included purposefully selected 16 registered nurses who were working in neurology ward, Hindu by religion and having any level of nursing education (Table 1). Sixteen Hindu stroke patients and their family caregivers to participate as associate participants (Table 2). They were adult stroke patients and admitted in neurology ward, had cognitive intact revealed by mini-mental status examination (MMSE > 20) and showed a willingness to participate in the study.

Table 1
Summary of the nurse participants charecteristics (N = 16)

Characteristics		Frequency
Age in years	21–30 age group	10
	31–40	3
	41–60 age group	3
Education	Diploma in Nursing	3
	Bachelor of Nursing	13
Position/ Designation	Nurse supervisor	1
	Nurse in-charge	2
	Staff nurse	13
Working experiences in neurology ward	Less than 5 years	10
	5–10 years	3
	> 10 years	3
General training on neurology	Yes	2
	No	14
Special training on stroke and yoga	Yes	0
	No	16
Yoga practice at home	Yes (not regular)	6
	No	10

Table 2
Summary of the patients and family caregivers participant characteristics (N = 32)

Characteristics		Frequency	
		Patient (n-16)	Family (n-16)
Age in years	18–40	4	10
	41–60	5	6
	61–80	7	-
Sex	Male	9	9
	Female	7	7
Education	Read and write only	7	1
	Basic education	8	10
	University education	1	5
Relation with patients	Spouse (husband/ wife)	NA	5
	Children (son/ daughter)		9
	Parent (father/ mother)		2
Habits	Smoking/ tobacco use	12	5
	Alcohol	8	7
	Physical exercise	7	10
	Yoga practice at home	2	3

Ethical Considerations

The study was approved by Ethics Committee of Nepal Health Research Council. Similarly, administrative permission was taken from the hospital authority. Participant's rights were protected by using written and verbal informed consent; self-introducing of the researcher and informing the participants about the purpose of the study, and duration and frequency of the interview along with voice recording and use of a camera for capturing some pictures. The voluntary nature of participation was made that participants could withdraw the study any time. Anonymity was assured and participants' privacy and confidentiality were maintained during the time of data collection and publication by not revealing the name of the participants.

Program Implementation

The nurse participants were prepared for the implementation of the program through a training workshop, coaching and daily yoga sessions as 30 minutes per day for four weeks. Afterward, the nurses implemented the program into stroke patients with the help of family caregivers. The whole program was facilitated by the researcher. The program was initiated into the patients from the first day of hospitalization and continued until discharge (ranged from 8–24 days) through active involvement of the nurses, stroke patients and their family members as well as the researcher as a facilitator. Afterward, the program was self-practiced by the patients with the support of the family caregivers for 8 weeks at home after discharge. Therefore, the total length of the intervention program in a patient was range 9–11 weeks since the initiation of the program. After discharge, follow up to the patients was done by the researcher through telephone calls at home and clinic visit at the outpatients departments of the hospital. However, the total study period was around one year since the first phase of the action research.

While implementing of the program, firstly, caring relationship was established and maintained by using cultural specific caring concepts such as respect, communication, confidence, commitment, and courage among the nurses. The created caring relationship enhanced the mutual trust and confidence among nurses patients and family caregivers, resulted in increased motivation and active participation in the program by the patients and family caregivers. The content of the program is given in Table 3 below.

Table 3
Content of Caring Incorporating Yoga Intervention

Part-I Essential care: Knowledge & Skill	Part-II Specific care: Yoga knowledge and practice
1. Overview of stroke knowledge	1. Overview of Yoga Knowledge
2. Complications prevention and management	2. Components of Yoga:
3. Discharge reconciliation: medication regimen, point to contact and follow up clinic visit	a. <i>Asana</i> (physical exercise): <i>Base poses, Shukshmasana; Pastimomuktasana; Setu Bandasana; Padangusthanana; Utkasana; Utthapaadasana; Savasana</i>
4. Skill on the technique of positioning, transfer, and mobility	b. <i>Yoga Namaste</i>
	c. <i>Pranayama</i> (breathing exercise): <i>Anulom-Bilom (alternative nostril breathing); Vastrika (deep inhalation and exhalation)</i>
	d. <i>Aum</i> chanting (meditation)

Data Collection

Data collection was done from December 2017 to June 2018 through a focus group discussion and individual interview with the nurse participants. While face to-face interview was conducted with stroke patients and their family caregivers using open ended interview guideline with audio recordings that lasted for 20 minutes to one hour for exploring their experience of using caring incorporating yoga program for physical recovery of stroke patients in acute phase. Feeling of hopelessness and wanting to

give up joining the program during the initial period of the intervention, nurses provided emotional support by encouraging and allowing them to take a rest and continued when they were ready. Fieldnote was used to document the needed contextual information during and after the researcher's observation the study phenomenon in the field. Data collection was continued until data saturation. In addition, Barthel Index was used in stroke patients for measuring the score of physical recovery in terms of functional ability of daily living activities.

Data Analysis

The process of data analysis was started since the beginning of the data collection. Inductive content analysis was conducted according to Elo et al, (2008) following the three stages: preparation, organizing, and reporting [38]. In the preparation phase, the entire interview was selected as a unit of analysis. Further, the audio recordings were transcribed verbatim and translated from Nepali language into English by following the steps recommended by van Nes, Abma, Jonsson, and Deeg (201) [39]. The researcher read each transcript several times to immerse into the data and obtained a general sense of data about the caring incorporating yoga program on physical recovery of the stroke patients. In organizing, the researcher did some actions such as open coding, creating categories and abstraction. In open coding, notes were written in the text during reading the interview. The written notes were read several times thoroughly and as many heading and codes were written down in the margin to describe all the aspect of the content. Afterward, codes were transferred from the margins on to coding sheets and subcategories were classified under the categories with a higher level of abstraction. Lastly, the relationships between categories were analyzed and linked them to expose the structure of the study concepts of physical recovery among stroke survivors.

Rigor Of The Study

Following Lincoln and Guba's (1988) criteria of rigor credibility was maintained through prolonged engagement around one year in the study setting since the initial phase (reconnaissance) of action research to end of the study, persistent observation, and peer debriefing through discussion among the research team[40]. In addition, data triangulation was done by gathering data through an interview with multiple participants and many times with the same participants along with using observation and field notes by the researcher. Collections of thick description of data, purposeful sampling technique and detail explanation of the research process were done to achieve transferability. Dependability was maintained through explaining and documenting the study context, objectives of the study, process of participant's selection, data collection, and data analysis methods. Confirmability was achieved through a detailed description of the research process, maintaining credibility, transferability, and dependability.

Results

The results of the study is presented the experiences in the use of caring integrating yoga to promote physical recovery of stroke patients since they were in the acute phase. The emerged them are classified into three main parts as 1) caring as a tool to establish trusting relationship in acute phase; 2) yoga as a practical and powerful tool for physical recovery of stroke during acute phase; and 3) perceived physical recovery as a result of the caring incorporating yoga program.

Table 4
The main themes and related sub-themes

Themes	Sub-themes
Caring as a tool to establish trusting relationship in acute phase	Developed the relationship and trust from the patients and family.
	Gaining knowledge and ability on caring for self and patients
	Perceived mutual benefits from the program
Yoga as a practical and powerful tool for physical recovery of stroke during acute phase	Not time-consuming and easy to be implemented
	Self knowing and realizing
	Creating hope, motivation and will power for recovery in acute stage
Perceived physical recovery as a result of the caring incorporating yoga program	Feeling comfort, relax, refresh and increased sensation
	Increased physical exercise and purposeful movements
	Improvement of self-care ability and ADLs
Caring as a tool to establish trusting relationship in acute phase	

The meaning of the theme reflectes that the program specially caring works as a tool for developing the trusting relationship among the nurses, patients and their family members. By using this tool, nurses felt that they gain trust from the patients and their family members as well as perceived mutual benefits frm the program which was important for successful implementation of the program with good cooperation from their clients. Similarly, patients and family caregivers also developed trust toward the nurses' caring practices because they gained knowledge and skills to take care self and the patients and perceived benefits from the program. The supportive sub-themes included developed the relationship and trust from the clientsand family; gaining knowledge and ability on caring for self and the patients; and 3) perceived mutual benefits from the program.

Developed the relationship and trust from the patients and family.

This categorical theme was expressed by the nurses emphasizing the nurses' caring actions that helped very much for establishing the interpersonal relationship and gaining trust from the patients and their family caregivers. Trust is a basic quality required to facilitate patient and family engagement in caring during hospitalization. Even though, initially many nurses admitted that communication with the clients in acute stage was difficult due to lost voice, denial and feeling shocked since they were at the maximum level of stress and anxiety. However, active communication was intentionally created in each moments and every encounters while interacting with the patients and family through verbal interaction and non-verbal means such as direct interactions, listening; touching, being silent presence, eye-eye contact, and paying attention. Establishing relationship and trust is supported by the verbatims given by the participants during hospitalization. A senior staff nurse stated:

Before using this program, I never thought about interaction with the patients as a part of care. But now we are often talking with patients. I am enjoying talking with them while providing care. I listen to them, pay attention to them, make eye to eye contact, and touch them. These interpersonal techniques are very effective in developing understanding and trusting relationships. (N-5)

Similarly, an in-charge nurse also perceived benefits of effects of relationship and trust while providing care using the program in hospital setting. She stated:

Because of a trusting relationship, they showed co-operation and active participation while implementing the program. They responded to us promptly while meeting, wanted to share about happiness by showing their success like smiling with us, sitting on a chair, walking, greeting, speaking and so forth. I found them looked happy and cheerful. (N-1)

The nurses also mentioned that the patient and family members were being closer with the nurses like a family members. Such relationship resulted in developing self-motivation and active participation in own care process.

Gaining knowledge and ability in caring for self and the patients.

This subtheme is emerged from the experiences of the nurses, patients and their family caregivers after implementation of the program. Educating the stroke patients in their acute stage of illness while urging them to practice it was challenging. They often were seen as not physically-mentally ready to learn new things due to sudden loss of muscle movement along with psychological disturbance. Provision of appropriate set of yoga practice through caring approach with genuine attention, understanding the physical limitation of the patients, encouraging, motivating, and being present of a nurse and family caregiver was used successfully in the study. In turn, such caring behaviors and actions of the nurses helped cheer up and motivate the patients as well as their family caregivers to continue self working for patients recovery. They gained both knowledge about the disease and ability to self-care after having stroke. The statement is supported by the verbatim given by a young female stroke patient during hospitalization in acute. She has spoken her experience as follow:

Sisters give me information and teach me how to do yoga. Now, I understand about my disease, and what to do for my recovery. I am trying to sit long time rather than lying on the bed all the time. I also practice some yoga poses while seated and lying.(P-4)

A young son of the female stroke patients also explore his experiences as he gained knowledge and skill for caring to his mother before discharged from the hospital. He has spoken as:

A sister taught me about the technique of transfer, walking and so on. Most importantly, you taught us about yoga. We've got a chance to learning new things. Now, I am able to provide care to my mom. As a result, we achieved an early improvement in my mom. (F-3)

Important strategies linked with caring that encourages the patients to actively participate in the program were being motivated, being confident and having hope to get recovery. A senior nurse mentioned her experience to support the above statement as follow:

They (patients) repeat the same activity many times accordingly without feeling bored. They presented more motivation and hope to get cure. Patients also follow our instruction easily This may be because we implement this program only in cognitively intact patients who are not severe. Our nurses pay attention and care to them using this program. (N-16).

Gaining mutual benefits from the program.

The program was aimed to bring expected health outcomes to the patients. After implementing the program, the nurses also experienced several of their own benefits, and changes from the program. It was often reflected by nurse participants that the program also helped very much to understand their crucial role in patients' recovery. The nurses replied that their caring actions could significantly change their perception toward nurses' professional role and practice that help to built the relationship among nurse, patients and family caregivers. As a result, it helped to uplift nurse profession as well as being satisfied and proud with their changed role in the care. The supportive verbatims are presented as follow:

Being involved with the program, I feel that nurses have played a vital role in patient's rehabilitation and early recovery. Before this program, we just performed routine works then sat down at the station. I never felt satisfied like this before.(N-6)

A nurse in-charge also mentioned her experience about the benefits of the program.

Basically, we want positive health outcomes of the patients which are gained from the program like early transfer, early limb movement, walking, speech. Such positive outcomes directly help to increase our. Therefore, this program is good for us but it is far better to the stroke patients in their early recovery. (N-1)

Though, caring worked as a tool for establishing trusting relationship among nurses, patients and their family that can further influenced the strokes patients to practice yoga actively for their physical recovery.

Yoga as a practical and powerful tool for physical recovery of stroke during acute phase.

In this study, yoga was used with the main aim to emphasize physical recovery of stroke patients in acute phase. Thus, the yoga methods being selected to use were *yoga asana* to rehabilitate and strengthen the muscles. While the *pranayama* (breathing exercise) and *aum* chanting were used to calm down the mind and boost up the spirit which resulted in increased self awareness and motivation in self work toward expected physical recovery. Three supportive sub-themes included not time-consuming and easy to be implemented; self knowing and realizing; and creating hope and will power in recovery in acute stage.

Not time-consuming and easy to be implemented.

This subtheme reflected that yoga was practical and possible for stroke patients in the acute phase when the nurses were experiencing the use of yoga in the real clinical practice. The majority of the nurses shared their experiences by comparing own perception before and after implementation of the program with happy and cheerful face. The above explanation reflected about confidence, willingness and attention of the nurse participants toward the program. Supportive verbatims was spoken by a staff nurse as follow:

Now, we have just opposite thought than before about using program and yoga into the stroke patients. The yoga exercise is very simple, easy to practice and implement to acute stroke clients. Stroke patients are using it without any difficulties. We teach them only once and they consciously follow every pose properly. Afterwards, we just observe whether they can do them properly or not. (N-7)

An in-charge nurse has spoken her experience to support the above theme as follow:

In fact, in the beginning of the program, we scared that it might increase our workload and make routines more complex. In reality, it was easily applied. Patients, and their family caregivers took initiation themselves once we taught. Then, it did not put an extra load on us but made it easy. (N-2)

Most of the nurse participants also expressed the main reason for accepting it as easy practice and not time consuming for teaching the patients to do *yoga* even in the acute phase of stroke. Since yoga belongs to Hindu culture, therefore the nurses were familiar and perceived it as good for health as well as having experience. Supportive verbatims are presented as follow:

A senior staff nurse who is familiar with the benefits of yoga for health, explored her experiences about the reason of accepting the yoga easily by all participants. She stated .

Actually, in Nepal, most of the people are familiar with the term yoga and know well about its benefits, even heard the term yoga in their day to day life. Therefore, they feel easy to practice. This booklet also helps to understand it clearly. (N-3)

A wife (school teacher) of a stroke patient who was taking care her husband using the program for 3 weeks in hospital also mentioned similar perception as nurses of using the program as follow:

When a new patient was admitted, sisters respond promptly and taught yoga exercise immediately which I observed since I was here to care for my husband. This may be due to Hindu culture, doing yoga and chanting aum became possible, which we knew from our childhood.(F-13)

Likewise, the other reasons for possibility to use yoga with stroke patients was a variety of practice techniques of yoga that suits conditions of the stroke in an acute stage such as yoga *asana*, *pranayama*, and chanting *Mantra* that exist in the program. Furthermore, yoga *asana* also has different types of physical works ranging from very gentle to rigorous movement that can be selected for stroke patients in acute phase.

Self-knowing and realizing

Self-knowing and realizing experienced by the strokes after continuing practice of yoga and were described as knowing the current health condition and surrounded environmental and social factors as they really are, and realizing the changes and self responsibility on the care for recovery. The development of self-knowing and self-realizing of the stroke participants helped them to participate in the program actively which resulted in early recovery of the physical function as reflected in these verbatim. A in-charge nurse in the hospital express her experience as follow:

After 2–3 days of practicing yoga, patients and family caregivers not only felt but also realized their own role and responsibility in patient's care. That's why, they participated actively in own care from their side. (N-1)

A patient has spoken about his improvement after practicing of yoga at the 7th day of using yoga in the hospital as follow.

I found improvement after practicing yoga in my voice, ability to move my weak leg and walk with support. I have confidence that and I can follow the program guided in the booklet. I feel that I will be better soon. (P-15)

Creating hope, motivation and will power for recovery in acute stage

Due to sudden onset of disease, patients lost hope and will power along with motivation that definitely impacts in participation in the program and recovery of the clients as reflected by these verbatim. A patient who practice yoga since her childhood explore her experience after 10 days of program implementation:

Yoga is the thing that I was doing previously since my childhood. Now, I felt confident that I would get well, with the feeling that now nothing untoward will happen to me, that I can do yoga. Then, I've got more courage to do other activities.(P-5)

Additionally, within 2nd and 3rd day after participation in the program in the hospital, stroke patients noticed a prompt but subtle change in their physical body that acted as a good facilitator resulted in creating will power, hope, motivation and self-confidence. This is supported by the verbatims given by the nurses.

Feeling of improvement in the acute stage of the patient, only small notable changes can play a vital role in creating hope and will power toward recovery and improvement. For instance, when patients can offer namaste by using the disabled hand with the support of good hand, they may feel some achievement in independence.(N-6)

As I observed in my night duty, a patient started to chant aum since early morning and also at night time until fall asleep. Her vocal has been improved very fast. Since that time, I extremely believe that aum chanting can bring vocal improvement faster. (N-12)

The above description of all themes explored the effectiveness of caring incorporating yoga that acted as a powerful tool in patients recovery. Ultimately, the program enhanced the physical recovery in many ways.

Perceived physical recovery as a result of the caring incorporating yoga intervention

The theme is reflected by narrative given by the stroke patients and family caregivers complimented by score of activities of daily living. The findings explored that meaning of recovery and purpose of life after stroke varied in person to person. The three supportive sub-themes were feeling comfort, relax, refresh and increased sensation; increased physical exercise and purposeful movements; and improvement of self-care ability and ADLs and described as follow.

Feeling comforts, relax, refresh and increased sensation.

While asking about their perception on the program in terms of physical health condition, most of the stroke patients explored their perception about feeling comfortable, fresh and relax and increased sensation on paralyzed site after participation in the program. Nurses and family caregivers also shared the same perception with the patients. The statement is supported by following verbatims expressed by a male patient in his own words at 8th day of the program implementation:

I am able to do all the exercises as mentioned in the book. I feel more relax and fresh in my body. Although I cannot move my right hand at all, but I can move it with the support of my left hand. Today, I rose up hands fully while doing yoga namaste. I'm feeling better.(P-11)

Similarly, a family caregiver also expressed his/her perception on the feeling of physical recovery of the stroke participants after a week of hospitalization. S/he stated:

My husband couldn't even move his right hand and did not feel touch, hot, cold and pain in his right hand and leg. It was totally frozen when we arrived in the hospital. But now, after came to hospital and doing

yoga practice his sensation feeling came back. (F-14)

Increased physical exercise and purposeful movements.

After stucked by a stroke, almost all patients were immobile and spent their time on bed. In contrast, after initiation of the program particularly yoga *asana* such as yoga *namaste*, chanting *aum*, movement of hands and legs along with neck movement and other yoga poses, several stroke patients often moved their hands and legs purposefully and independently in their own pace, free time and with little effort and support of the family members. Importantly, they also gain the independence in doing some previous tasks such as offering *namaste* using both hands; movement of fingers, chanting *aum*. The resuming previous tasks lead to development of positive attitudes and motivation toward care participation, recovery and future life. A senior staff nurse expressed her supportive verbatim as follow:

I observed that patients looked excited to move their hands, chanting aum and offering namaste to others where family members encourage and help them for practicing the program. Several patients kept on moving their limbs. This may be because of independent practice and perceived improvement in health. Anyway, all those exercises to enhance the physical recovery of the patients.(N-5)

The above improvement and perception toward the program may enhance the improvement in self-care ability and level of independence in activities of daily living. Further regarding improvement in self-care ability and ADLs is described in next subtheme as described below.

Improvement in self-care ability and ADLs

Improvement in self-care ability and activities of daily living indicated that patient's physical recovery has been improved that was reflected by narrative expressions and ADL scores. Following narrative expression of the nurses, and patients are presented to support the above statement.

A female stroke patient having moderate stroke mentioned about her improvement in activities of daily living. She expressed her experience after practicing of the program in the 5th day of practicing yoga in the hospital. She has spoken as:

At the beginning for 2–3 days of hospitalization, I laid on bed. I had a pipe for urine and another for feeding. Now, I can go to the toilet, can brush and eat myself. I need little support for wearing cloth, combing hair, walking and going to toilet. My daughter helps me for these. But I can clean my hand, wash face, brush my teeth myself. I know that, the program has a great impact on gaining such improvement to me. (P-9)

A senior nurse remarked that the patient's physical recovery after 10 days of hospitalization was partly improved by caring actions that motivated continuing self practice of the stroke patients as follows:

Do you know the patients bed no 56, a young boy? In the first 2–3 days of hospitalization, he was sleeping all the time, aphasic, weak, sad and depressed. His condition was very critical. He was partially dependent. After I taught some yoga practice along with continuous communication, counseling, and

encouragement, he was motivated. Now, within he can move around, can speak some words, and eat with partial support. I felt that our encouragement and concern played a vital role in recovery of this patient as he hasn't shown interest in the beginning, gradually he is motivated and can follow us. (N-3)

The physical recovery of the stroke participants was confirmed by the ADL scores. The ADLs scored was assessed in four different stages before implementation of the program i.e, initially, at the time of discharge, 4th and 8th weeks after discharge from the hospital by using Modified Barthel Index Scale (MBI) [41]. The MBI scale contains 10 items: feeding, bathing, grooming, bowel, bladder control, walking, toilet use, transfer, mobility and stairs. A total 100 score with higher score reflects the greater independence while lower score reflects lower independence or higher dependence to perform activities of daily living.

The findings shows that the initial ADLs score ranged from 15–55. Of 16, six patients scored below 20 whereas remaining 10 scored 21–60. It indicates that all the patients need support from others for doing ADLs in acute stage. However, at the day of discharge (8–24 days), nine patients were still in the stage of severe dependence (scored 21–60) whereas six patients were moderately dependence (scored 61–90). Only one patient was fully independence (scored 100). At the end of the program (9–11 weeks), half of the patients were slight dependence and independence (scored above 90) whereas half of them were moderately dependence (scored 60–90).

This ADLs score helps confirm the perceived health outcomes as a result of the program implementation that the caring incorporating yoga program should be useful and contributes to physical recovery of stroke patients in acute phase.

Discussion

The findings of the current study revealed the uniqueness of caring incorporating yoga program that was resulted in early physical recovery of Nepalese Hindu stroke patients in acute phase perceived by the nurses, as well as the patients and their family caregivers. The perceived physical recovery in a positive manners revealed the effectiveness of the program that was culturally congruent with the sociocultural background of the participants as all of them were Hindu by religion. The findings show that they appeared to accept this program very easily since their acute stage of stroke during their hospitalization.

There are three main themes with 9 interrelated subthemes reflected by the nurses, patients and family caregivers on their experiences in participating the program toward the patients' expected health outcomes. The themes included caring as a tool to established relationship and trust in acute phase; yoga as a practical and powerful tool for physical recovery of stroke during acute phase; and perceived physical recovery as a result of the caring incorporating yoga program.

Caring incorporating yoga was used with the aim focusing on physical recovery, so the yoga methods selected to use in this study were yoga *asana*, yoga *namaste*, *pranayama* and *aum* chanting for physical recovery through caring approach. While yoga *asana* and *namaste* were targeting on the recovery of

physical body [42], the *pranayama and aum* chanting were primarily working on the mind or psychospiritual aspect [43, 44, 45]. The mind was also included as a part of the goal of the program intervention because body and mind are closely influencing each other in health. Therefore, the stability of psychological, emotional and spiritual health of the patients amplifies the progression of physical health as well as holistic health.

The practice of *pranayama and aum* chanting helps cultivate mindfulness that brings self awareness and self realization, and further leads to realization of new health condition and meaning of life which was an important motivation and driving force to continue self practice following the program. While caring helps stimulate active engagement of the patients and family into the care. In the present study, caring incorporating yoga could attract more attention from the patients due to the synergic effect of both the caring and yoga. It was evident that the patient easily accept the program and continuing practice it due to several reasons, e.g., closely supported and guided by nurses, acquainted and having faith in yoga, can practice in free time, cheapness and having varieties of yoga methods to be selected to suit the condition of strokes, and experienced some positive health outcomes in a short period of time, e.g. voice, transfer from bed, and movement of hands. The ability to gain acceptance and continuing practice of the program are considered to be success factors of the program.

Caring as a tool to established relationship and trust in acute phase. A trusted relationship based on understanding and respect gained from the stroke patients and family was paramount in enhancing the capacity of the stroke patients to self-care for their recovery. It was reported that a good nurse-client relationship is crucial to help the clients meet their healthcare needs [46], optimize the sense of recovery [24, 47], and harmonize body-mind-spirit [21] for stroke patients. In the present study, caring was initially overlooked by the nurses in the clinical practice. Their attitude toward nursing-caring has been shaped through the provided trainings and their experiential caring practice following the program. The nurse participants have learnt that the caring incorporating yoga was easy, practical and did not burden their workload as their prior thought. Instead, caring could be rewarding and fulfilling [48], the nurses felt proud and satisfied by the positive responses and health outcomes of the patients as well as the uplift of nurse profession that was also reported by previous studies [21, 24, 25]. Therefore, caring is the central concept of nursing which also facilitates to established relationship and trust that resulted in capacity to self-care caring to self and the patients, and finally achieved expected health outcomes in the patients in acute phase.

Furthermore, the study also revealed that yoga acted as a powerful and practical tool for physical recovery of stroke during acute phase. Yoga was easy, practical and powerful for Hindu stroke patients to practice for their physical recovery in acute phase of the illness. The practice of *pranayama* and meditation by chanting *aum* helps cultivate mindfulness that allows the patient to understand and realize their illnesses and how important role they have in stroke recovery. Yoga practice also helps to create the hope, motivation and will power for recovery primarily based on their self practice. These changes occurred from within as a result of yoga practice, complemented with the encouragement of nurses through caring approach were important driving force for the patients to continue practice of yoga.

Previous studies revealed that *pranayama* and chanting *aum* are good for dealing the motivation [36] and connection of body and mind as well as overcoming fatigue and hopelessness [42]. Additionally, it was reported that self-compassion, and greater mindfulness were found among acute ill patients who practice yoga for 6 weeks [49]. The changes of the patients' insight was crucial for their initiation to work for own health improvement.

This article was not aimed to explore perceived experience of the nurses and patients on participating in the program and health outcomes as a result of the practice. Although, successful health outcomes have been experienced, these positive outcomes cannot be totally claimed to be the outcomes of the program because it was studied in natural setting. There are many factors that may contribute to the recover of the strokes in the acute phase. Those factors include age, types of stroke, the size and location of lesion, comorbidity of the patients and etc [11, 50]. In the present study, the age of the patients was ranged from 28–80 years where more than half of them were under 60 years. All the patients were cognitive intact and had good support from their families so they could understand and follow the instruction of the nurses and health care providers accordingly. Existing studies revealed that a lack of physical activities and having complications in early stage are associated with poor functional outcomes [51, 52, 53]. Thus, application of yoga intervention in the early stage of stroke should have a greater impact on physical function. Studies revealed that around 50 percent of the recovery will occur during the first 2 weeks and up to 48–91 percent of the recovery within three months period after disease onset [54]. In the present study, the program was initiated from the second day of hospitalization among medically stable and cognitive intact acute stroke patients.

The present study presented the power of caring and yoga in improving physical recovery as well as holistic health of stroke patients in acute phase. The success factors of the program are trusted relationship gained from the patients and the easy, practical and effectiveness of yoga methods that well suit with the patients' health condition. The findings will be served as a guideline to the nurses in caring practice integrating yoga to their stroke patients in the acute phase and help them to regain with their sudden lost physical function due to stroke.

Conclusions

This study findings explored the the new empirical knowledge in nursing practice i.e caring incorporating yoga from the participants experiences. that contributes to early recovery among stroke patients in the acute phase. This study encourage the nurse to realize and give attention on caring especially the nurse-patient relationship which is essential for improving the health outcomes as well as the nursing profession. Nurses in the clinical setting can use this knowledge to improve their nursing care to the critical patients in the hospital setting as well as after discharge for rehabilitation. Such type of knowledge can be replicated in the global community with patients having a different clinical illness. Therefore, this study suggested for nurses to support, motivate and encourage patient with stroke in the acute phase with creating conducive learning and practicing environment for yoga practice to enhance physical function and another dimension of health for wellbeing. Moreover, based on this study finding,

nurses can focus on clinical control trial study in the future to identify the effectiveness of yoga practice for optimizing healing of stroke in the acute phase.

Declarations

Ethics approval and consent to participates

This study was approved by Nepal Helath Research Council Ethical Review Board in Dec. 2017 (Reg. no, 471/2017). Before data collection, a written consent was obtained from all participants after informed of the purpose of the study and the voluntary nature of their participation.

Consent for publication

Not applicable

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Availability of data and materials

The datasets generated and analyzed during the current study are available by contacting the corresponding author.

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Authors' contributions

KPA led the study Study; KPA, & UH contributed in the design of the study; KPA collected the data; KPA and UH analyzed and interpreted the findings. KPA and UH complited the first draft of the paper and all authors revised the first draft and approved the version of the submission.

Competing interests

The authors declare that they have no competing interests

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