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CASE REPORT ARTICLE

CONSTRUCTION OF EDUCATIONAL TECHNOLOGY FOR HOME CARE AFTER ENCEPHALIC VASCULAR ACCIDENT: CASE REPORT

CONSTRUÇÃO DE TECNOLOGIA EDUCATIVA PARA CUIDADO DOMICILIAR APÓS ACIDENTE VASCULAR ENCEFÁLICO: RELATO DE EXPERIÊNCIA

CONTRUCCIÓN DE TECNOLOGÍA EDUCATIVA PARA CUIDADO DOMICILIARIO DESPUÉS DE UN ACCIDENTE ENCEFÁLICO: RELATO DE EXPERIENCIA

Gabriela Galdini Saldan[1], Fernanda Sabini Faix Figueiredo[2], Fernanda Misawa[3], Anderson da Silva Rêgo[4], Maria Aparecida Salci[5], Cremilde Aparecida Trindade Radovanovic[6]

ABSTRACT

Objective: to report the construction of an educational folder with nursing guidelines for the home care of patients with disabilities due to an encephalic vascular accident. ***Method***: this is a descriptive study of experience report type. Data collection was carried out based on patient records, divided into three stages: collection of sociodemographic and clinical information, nursing problems survey and folder elaboration. ***Results***: 39 records were analyzed. Most patients were male and over 60 years old. In the survey stage of the nursing problems, the five most frequent diagnoses in these patients were selected, and from them, the folder was built. ***Conclusion***: it was possible to carry out the description of home care using the folder as a didactic tool, with the potential to be used in care practice. ***Descriptors***: Stroke; Health Education; Educational Technology; Nursing Care; Family.

RESUMO

Objetivo: relatar a construção de um *folder* educativo com orientações de enfermagem para o cuidado domiciliar de pacientes com incapacidades decorrentes do Acidente Vascular Encefálico. ***Método***: estudo descritivo, tipo relato de experiência. A coleta dos dados foi realizada a partir de consultas a prontuários, dividida em três etapas: coleta das informações sociodemográficas e clínicas, levantamento dos problemas de enfermagem e elaboração do *folder*. ***Resultados***: foram analisados 39 prontuários, a maioria dos pacientes era do sexo masculino e maior de 60 anos. Na etapa de levantamento dos problemas de enfermagem foram selecionados os cinco diagnósticos mais frequentes nesses pacientes e a partir deles foi construído o folder. ***Conclusão***: foi possível realizar a descrição de cuidado domiciliar utilizando o *folder* como ferramenta didática, com potencial para ser utilizado na prática assistencial. ***Descritores***: Acidente Vascular Encefálico; Educação em Saúde; Tecnologia Educacional; Cuidados de Enfermagem; Família.

RESUMEN

Objetivo: relatar la construcción de un folder educativo con orientaciones de enfermería para el cuidado domiciliario de pacientes con incapacidades decurrentes del Accidente Vascular Encefálico. ***Método***: estudio descriptivo, del tipo relato de experiencia. La recolección de los datos fue realizada a partir de consultas a prontuarios, dividida en tres etapas: recolección de las informaciones socio-demográficas y clínicas, levantamiento de los problemas de enfermería y elaboración del folder. ***Resultados***: fueron analizados 39 prontuarios, la mayoría de los pacientes era del sexo masculino y mayor de 60 años. En la etapa de levantamiento de los problemas de enfermería fueron seleccionados los cinco diagnósticos más frecuentes en estos pacientes y a partir de ellos fue construido el folder. ***Conclusión***: fue posible realizar la descripción de cuidado domiciliario utilizando el folder como herramienta didáctica, con potencial para ser utilizado en la práctica asistencial. ***Descriptores***: Carrera; Educación para la Salud; La tecnología Educativa; Los Cuidados de enfermería; Familia.

[1]Nurse (graduated), State University of Maringá/UEM. Maringá (PR), Brazil. E-mail: gabisaldan@gmail.com; [2,4]Nurses, Master students, Graduate Program in Nursing, State University of Maringá/UEM. Maringá (PR), Brazil. E-mail: sabinifaix@hotmail.com; andersondsre@gmail.com; [3]Nurse, Master in Nursing, State University of Maringá/UEM. Maringá (PR), Brazil. E-mail: fermiss@bol.com.br; [5]Nurse, Ph.D. Profess in Nursing, Undergraduate Nursing Course, State University of Maringá/UEM. Maringá (PR), Brazil. E-mail: masalci@uem.br; [6]Nurse, Ph.D. Profess, Undergraduate/Graduate Nursing Course, State University of Maringá/UEM. Maringá (PR), Brazil. E-mail: kikanovic2010@hotmail.com

INTRODUCTION

Non-communicable chronic diseases (NCDs) are considered a global public health problem, which poses threats to health and human development.[1] NCDs are 63% of deaths worldwide, and in Brazil the percentage reaches 72%, highlighting cardiovascular diseases, diabetes, cancer and chronic respiratory disease.[2]

According to data from the Brazilian Ministry of Health, among al the NCDs, cardiovascular diseases (CD) are responsible for 32% of the deaths.4 In Brazil, according to data from the Ministry of Health, cardiovascular diseases account for 30% of all deaths. These are one of the main disorders of the heart and blood vessels, which include coronary heart disease and cerebral vascular accident (CVA).[5]

CVA is one of the three leading causes of death in the world, and it is the leading cause of disability, accounting for 5.7 million deaths, 85% of them occurring in developing countries.[6] This pathology is considered the leading cause of physical disability[7,8], generating social and economic impact on people affected, as well as changes in family dynamics, becoming the main source of care for the patient.[6,8]

At least two-thirds of CVAs survivors become addicted, primarily to wandering, talking, feeling, and becoming unable to perform their usual activities. In this context, it is important to emphasize that families with CVA sufferers do not have adequate basic knowledge on how to treat, prevent and promote health even with the condition.[9]

After discharge, most CVA patients and their family members/caregiver continue to require follow-up and individualized special care. It is necessary that they receive guidelines according to the needs and incapacities resulting from the disease to ensure the continuity of the care started in the hospital, whether due to the CVA or another chronic condition, avoiding complications in the patient, providing a better quality of life to all the people involved in the caring process.

In this context, the need for more systematic guidance by the health professionals for the patient and the family at hospital discharge, which helps in the daily care routines, is observed., Through educational technologies, such as leaflets, booklets, and folders, health education emerges as an instrument to support health teams, especially nurses, who through their guidelines encourages families to participate in caregiving and the process of promotion and maintenance of health.[10]

Thus, educational technologies need to be created to enhance the care skills of both the patient and the family member and/or caregiver so that they can be used as care model of care.[11] Therefore, the objective of this study is based in describing the construction of an educational folder with nursing guidelines for home care for people with disabilities due to CVA.

METHOD

This is a descriptive study, about the process of elaborating an educational folder for the home care of patients with disabilities due to CVA, attended at a university hospital in the state of Paraná, Brazil.

The collection of data for the development of the folder was performed at the patient´s record service - SPP at a University Hospital, from September 2013 to June 2014. The study included records of patients older than 18 years old hospitalized with a diagnosis of CVA from January to December 2012, in the sectors of Emergency Relief, Medical Clinic and Intensive Care Unit - Adult.

The research was divided into three stages: the first one corresponded to the collection of sociodemographic and clinical information, the second was for the survey of nursing problems, and the third one was characterized by the elaboration of the folder.

For the first stage, data were collected from the medical records of the patients affected by the CVA, using a structured form, prepared by the researchers. This form comprised the collection of sociodemographic and identification variables: name, gender, age, race, profession, the level of education. The corresponding clinical data were: morbidities and risk factors: hypertension, diabetes mellitus, dyslipidemia, type of diet, smoking and alcoholism, as well as the date of the event and main complaints of the disease, treatment performed, length of hospitalization, complications or sequels.

The second stage was carried out by the analysis of the nursing evolutions, developed in the first and last week of hospitalization to raise the most frequent nursing problems that were identified in patients with CVA during their hospitalization. Through the problems surveys, the classification systems for the North American, *Nursing Diagnosis Association* (NANDA)[12] was used to identify nursing diagnoses and *Nursing Intervention Classification* (NIC)[13] was used for nursing interventions.

The third and final stages were the construction of educational technology containing nursing guidance on home care for CVA patients. The care and guidelines that compose the folder were obtained from the analysis of the data collected in the medical records in the first and second stages of the study.

In this last stage, a pilot model was elaborated, which was sent to four evaluators of being teachers, doctors in nursing and with experience in the area of care to hospitalized adult individuals. The objective was for the professionals to evaluate the content and suggest changes or adaptations according to the reality and applicability of them to the families. The evaluators´ requests, which were pertinent, were accepted and modified, allowing the elaboration of the final model.

The study was carried out by the ethical precepts disciplined by Resolution 466/12 of the National Health Council. The project was submitted to the Permanent Committee on Ethics in Research with Human Beings (COPEP) of the State University of Maringá. CAAE: 17990613.1.0000.0104) (Case Nº 352,376/2013) and exemption from the use of the Informed Consent Term (TCLE).

RESULTS

Among the 39 records analyzed, it was found that the most of the hospitalized patients with a diagnosis of CVA were male (58.9%), and most were 79.48% in the age group of 60 years old and over, and 69.2% were married. The mean hospitalization time of these patients was 9.2 days; the majority was diagnosed with ischemic CVA (84.8%), arterial hypertension (85.2%), followed by smoking (38.2%), the most prevalent risk factors for CVA, according to the records analyzed.

After the characterization of the patients with CVA, the analysis of the nursing evolutions was started, seeking to identify the nursing problems. After this survey, 20 nursing diagnoses were identified through NANDA taxonomy classification systems[12] and for classification of nursing interventions, IAS[13] was used (Figure 1).

Domains*	Diagnosis*	Intervention**
Nutrition	Impaired Swallowing	• Explaining the reasons for the scheme; • Helping the patient to sit still; • Providing/monitoring the food consistency; • Guiding the patient to open and close the mouth to feed; • Helping the hemiplegic patient to sit with the affected arm straight on the table.
	Unbalanced Nutrition	• Determining the patient´s food preferences; • Encouraging greater caloric intake appropriate to body type and lifestyle; • Offering the patient with easy-to-drink beverages and nutritious foods; • Providing food choice; • Weighing the patient at appropriate intervals.
Elimination and Exchange	Volume of deficient/excessive fluid	• Weighing daily and monitoring trends; • Monitoring the hydration state (moist mucous membranes, adequate pulses, and blood pressure); • Offering liquids as appropriate; • Counting or weigh diapers, as appropriate; • Monitoring vital signs.
	Urinary incontinence	• Providing privacy during disposal; • Providing protective clothing if necessary; • Sanitizing the skin area of the genitals; • Monitoring urinary elimination, including frequency, consistency, odor, volume and color; • Limiting liquids to two to three hours before bedtime, as appropriate.
	Impaired Urinary Elimination	• Monitoring ingestion and elimination; • Performing probing of relief due to urinary residue; • Stimulating the reflex bladder, applying cold in the abdomen, massaging the inner thigh or letting water run; • Providing sufficient time for emptying the bladder (10 minutes); • Monitoring the effects of prescription drugs, such as calcium channel blockers and anticholinergics.
	Cold	• Monitoring airborne noises; • Monitoring bowel movements, including frequency, consistency, shape, volume and

		color; • Evaluating the drug profile for gastrointestinal side effects; • Identifying the factors (e.g., medication, bed rest, and diet); • Encouraging increased fluid intake and high fiber diet.
	Intestinal incontinence	• Evaluating the nutritional content of the diet; • Observing the turgor of the skin; • Monitoring the skin in the perianal area for irritation and ulcer formation; • Teaching the patient to eliminate gas-forming and highly seasoned foods from the diet; • Recording the color, volume, frequency and consistency of feces.
Activity/Rest	Impaired physical mobility	• Employing motor activities that require attention and use on both sides of the body; • Helping the patient to develop realistic goals regarding movement; • Giving positive reinforcement to patient's efforts, encourage; • Dressing the patient in loose clothing; • Encouraging the patient to exercise independently.
	Impaired walking	• Assisting patients to wear shoes that facilitate walking and avoid injuries; • Encouraging independent walking within safe limits; • Helping the patient in the initial ambulation and as needed; • Providing a bed of low height, as appropriate; • Providing ancillary device (cane, walker or wheelchair) if the patient is unstable.
	Ineffective respiratory pattern	• Monitoring the occurrence of noisy breathing; • Monitoring respiratory secretions of the patient; • Monitoring hoarseness and change in voice; • Instituting respiratory therapy (ex-nebulizer) if necessary; • Using a pillow to support the patient in the chosen position.
	Disturbed sleep pattern	• Adapting the environment (lighting, noise, temperature, mattress and bed) to promote sleep; • Guiding the patient to avoid sleeping foods and beverages that interfere with sleep; • Adjusting the medication administration schedule in support of the patient's sleep/wake cycle; • Implementing comfort measures such as massage, positioning, and affective touch; • Helping the patient to limit sleep during the day, providing activities that promote the agreed state, as appropriate;
	Decreased cardiac output	• Guiding the patient and the family on the restriction of progression of activities; • Promoting stress reduction; • Monitoring vital signs frequently; • Guiding the patient about the importance of immediately reporting any discomfort in the chest; • Recognizing the presence of changes in blood pressure.
Perception/Cognition	Impaired verbal communication	• Listening carefully; • Providing verbal reminders/suggestions; • Giving positive effort and praise; • Reinforcing the need for follow-up with speech therapist after discharge; • Using figure if appropriate.
	Acute confusion	• Providing a private and neutral setting for the conversation; • Providing guidance throughout the process; • Using a variety of communication techniques; • Maintaining their neutrality during the process.
	Disturbed sensory	• Identifying when entering the patient's space;

	perception: vision	• Observing the patient´s reaction to diminished vision (depression, withdrawal, and denial). • Informing the patient about where to locate the radio, books, objects in general, etc. • Not changing the place of objects in the patient´s room without informing them; • Accepting patient´s reaction to diminished vision.
	Memory impaired	• Giving the opportunity to use the memory of recent events, such as questioning the patient about a recent walk. • Providing memory for recognizing photos and prints • Stimulating memory by repeating the last thought the patient expressed; • Remembering past experiences with the patient; • Giving the opportunity for concentration as the use of card pairs matching games, as appropriate.
Confrontation/Stress Tolerance	Anxiety/sadness	• Initiating necessary precautions to safeguard the patient (suicide, self-harm, violence); • Assisting in self-care if necessary; • Helping the patient to vent their feelings adequately; • Monitoring the patient about side effects of medications and their impacts on mood; • Assisting the patient in identifying the precipitating aspects of his bad mood; • Monitoring the patient's physical condition, weight, and hydration.
Security/Protection	Risk of infection	• Ensuring the use of appropriate technique in the care of injuries; • Stimulating rest; • Guiding the patient on appropriate hand washing techniques; • Teaching patient and family how to avoid infection; • Limiting visitor numbers.
	Risk of falls	• Reviewing the history of falls with the patient and family; • Monitoring gait, balance, and level of fatigue with ambulation; • Assisting the person without firmness in the ambulation; • Putting personal objects within reach of the patient; • Monitoring the ability to transfer from bed to chair and back and forth; • Avoiding accumulation of objects on the floor; • Providing night lighting by the bed.
	Impaired skin integrity	• Examining the skin and mucous membranes for redness, exaggerated heat, edema, and drainage; • Monitoring the skin for dryness and moisture; • Monitoring the appearance of sources of pressure and friction; • Guiding family member/caregivers on signs of skin degradation; • Examining the clothes for understanding.
Comfort	Acute pain	• Providing an atmosphere of support; • Avoiding false reassurance; • Encourage the patient to focus on one implication at a time; • Planning, with patients, tailored coping skills that can be employed to deal with future crises; • Evaluating with the patient whether the crisis has been resolved or not with the course of action chosen.

Figure 1. Diagnoses and Nursing Interventions of patients affected by stroke in 2012 at the university hospital of Maringá – HUM. Maringá (PR), Brazil, 2014.
*NANDA[12], **NIC[13]

According to the nursing diagnoses and interventions, the five most common diagnoses identified in records of CVA patients were identified (Table 1), which were considered for the development of the educational folder.

Table 1. Most frequent nursing diagnoses identified in the medical records of patients affected by stroke in 2012 at the University Hospital of Maringá – HUM. Maringá (PR), Brazil, 2014.

Domain	Diagnosis	Patients	
		n	%
Security/Protection	Risk of infection	39	100
Activity	Impaired physical mobility	26	66,6
Activity	Impaired walking	24	61,53
Activity	Self-care deficit	24	61,53
Security/Protection	Risk of falls	20	51,38

The educational technology was titled "Home guidance for caregivers of patients with disabilities due to CVA," consisting of illustrations, characterizing the most frequent diagnoses and the orientations were placed close to the illustrations that related it to facilitate the understanding of the content and make the material more attractive. In figure 1, it is observed the educative technology elaborated with orientations to care for patients with incapacities resulting from the CVA.

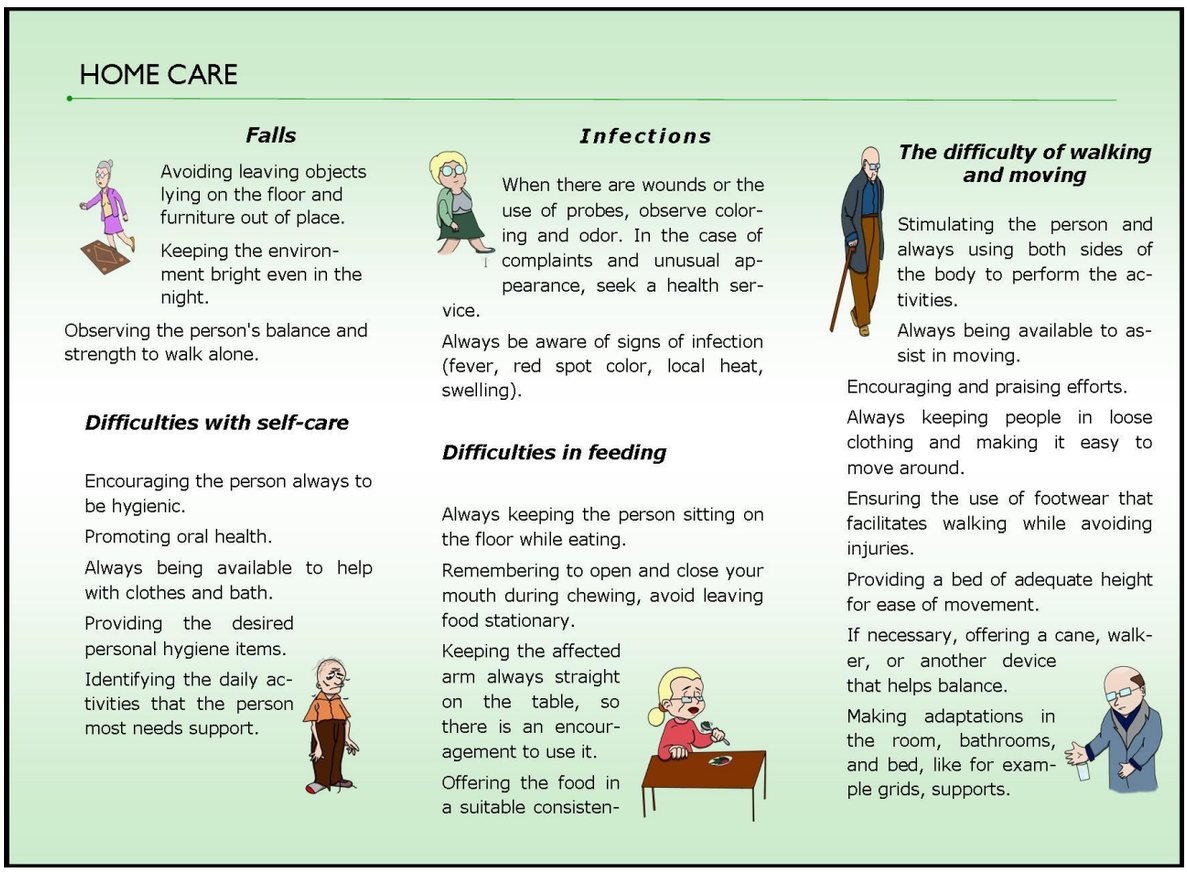

Figure 2. Educational technology with guidelines for care of patients with disabilities due to stroke. Maringá (PR), Brasil, 2014.

DISCUSSION

The educational technology was developed with the aim of contributing to the relationship between patient and caregiver, facilitating and providing quality care at home and providing a practical and easy-to-consult material, reinforcing verbal guidance provided in a hospital. A way of guaranteeing the communication between professional and patient and/or family member/caregiver with the exposure of the information necessary for the care, since the educational technologies are constituted in being a primordial source for the continuity of the knowledge of the practices of health and aid in respecting the knowledge and practices and the cultural context of the people involved.[28]

However, the nurse acts as a facilitator, mediating the knowledge through educational technologies, so care is carried out correctly and safely.[29] The folders are important methods to strengthen popular participation in the execution of self-care,[10] and we need more creative and committed professionals to creating and disseminating new ways of teaching and caring. However, its construction started from data that constitute important

evidence for the elaboration of the technology.

According to the records analyzed, most hospitalized patients with a diagnosis of CVA were male and older than 60 years old, corroborating with international and national studies[14-6], where age is a risk factor for CVA and other diseases, knowing that the elderly person is more vulnerable to chronic morbidities, reinforcing the need for actions in promotion, prevention, and recovery of health.[14,16]

In this context, arterial hypertension is one of the most frequent morbidities in people with disabilities due to CVA[14] and was one of the most prevalent risk factors in this study, which may contribute to the creation of new health policies and actions that the benefits of reducing and controlling blood pressure to prevent cardiovascular events and their consequences are evidenced.[17]

Smoking was the second most prevalent risk factor in this study, like other studies[14-5] conducted in Brazil. Research[18], conducted with patients attending physiotherapy, pointed out an association between the use of tobacco with cardiovascular events, reinforcing that actions to reduce consumption and health programs to aid in the process of disuse of nicotine are beneficial, with the knowledge that tobacco is one of the avoidable causes of death in the world.[19]

The most frequent nursing diagnosis was the risk of infection and can be referred to as the most prevalent diagnosis in hospitalized patients, due to several factors involved in the hospitalization process, requiring preventive actions that should guide the nursing behaviors in the care plan. It is associated with factors related to the treatment (surgery, presence of invasive routes and drug therapy), among others.[20]

The study also showed that the prevalence of the diagnoses mentioned above, followed by the diagnosis of the risk of falls (95.9%), impaired physical mobility (90.1%) and impaired walking (85.1%) patients).[21] In this same rehabilitation unit, another study of 37 individuals with CVA showed that the risk of falls was identified in 100% of the participants.[22]

The diagnosis “impaired swallowing” can be considered a predictor of the nursing diagnosis of “risk of aspiration in patients with CVA” and the identification of the risk factors for the diagnosis risk of aspiration in CVA patients is fundamental for the prevention of complications, reduction of hospitalization time, mortality and hospital cost.[23-4]

Disabilities resulting from stroke vary according to the location of the vascular lesion, the time of inadequate perfusion and the presence of collateral circulation. The main diagnoses found the loss of sensitivity, strength, movement and control. Such sequels compromise patients´ self-esteem and self-image, as well as their interaction with family and society.[21] Mobility is directly related to independence and the daily activities[25], becoming essential for the complete rehabilitation of patients. Caring for the person with disabilities due to CVA can generate many doubts in the family, which can cause feelings of suffering and pain, as well as many doubts about the plan of care and the restoration of the health and autonomy of the family member.[26]

The nursing interventions of the NIC are constituted by title and definition that cannot be altered because they represent a standardized language. They also show the activities that propose the actions that must be performed, which can be adapted by providing the individualization of care.[27] Faced with this, some activities selected for the construction of educational technology have been adapted to an accessible and easily understood language and can be used by any population. Nursing care should also be based on health education through individual guidance and directed to the needs of each person,[19] and educational technologies is one of the ways to guide the family and the patient to daily home care.

Home care is a practice commonly performed by the family members, who can lead to overload and stress, due to doubts regarding the current state of health of the family member, lack of guidelines regarding the care to be provided, social support and the own experience with the family member affected by CVA.[6] In this context, considering the need for care, educational technology emerges as a tool for health education and promotion of autonomy for both the patient and the family member/caregiver.[28]

CONCLUSION

The elaboration of educational technology based on diagnoses: risk of infection, impaired physical mobility and ambulation, self-care deficit and risk of falls, elucidate the real needs of patient care and facilitate the understanding of the family member/caregiver of health practices to be carried out.

The construction of the folder is a process that demands knowledge about the subject to be proposed and experience in the care that

should be provided. The methodology used in the study could subsidize the process of construction of the educational material. It is hoped that the study may contribute to further research and that health professionals use educational technologies for the adoption of good health practices by people facing the condition of living with disabilities from CVA as well as from their family.

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Corresponding Address

Anderson da Silva Rego
Rua Mandaguari, 168
Ap. 08
Bairro Zona Sete
CEP: 87020-230 — Maringá (PR), Brazil