

CYBER EXTENTION AS AN ALTERNATIVE INNOVATION OF CEREBRAL PALSY FAMILY COMMUNICATION NETWORK

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ABSTRAK

One of the problems of the family of cerebral palsy teenagers is that they still need a lot of information systematically and scientifically through counseling in order to build psychological functions of the families of cerebral palsy teenagers so that all family members can function fully to provide resilience for the care of cerebral palsy teenagers to fully help their children has limitations. One form of building resilience in parenting adolescent cerebral palsy is providing interventions in the form of counseling and information sharing through discussions and gatherings of several parents of cerebral palsy children who are then formed into communities that share information, share feelings, strengthen each other, remind each other, care for each other so that parenting of their cerebral palsy teenagers becomes lighter and easier.

One of the communication media that support the resilience of cerebral palsy adolescent care is to utilize cyber extensions which are new innovative communication media that are hybrid and convergent that utilize internet and interactive multimedia networks to bridge the process of information and knowledge transformation in the care and development of cerebral palsy teenagers. . So it is no longer a barrier to geographical distance between therapists, communities, families of urban cerebral palsy teenagers and families of cerebral palsy teenagers in different areas.

The method used in this research is descriptive method, namely research that aims to describe and explain things as they are, while the materials and methods used in this study use literature studies (literature review). The conclusion of this study is the optimization of the cyber extension as an alternative communication network innovation for families of cerebral palsy adolescents in resilience and growth and development of adolescent palsy by the use of computer information technology in terms of sharing information with fellow families of cerebral palsy children both in the form of community and therapist counseling. or medical rehab doctor through the internet one of them with social media.

Keywords: Cyber extension, Counseling, Intervention, Endurance parenting, Cerebral Palsy, Communication Networks

I. PRELIMINARY

1. Research background

Disability is not just a disability but is the result of interaction of the limitations experienced by someone with special needs with their environment, not just physical or mental, but is a multi-dimensional phenomenon consisting of bodily functions, limited activities, barriers to participation and environmental factors. (Lestari, Yani and Nurhidayah, 2018).

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Law Number 36 of 2009 concerning Health states that efforts to maintain the health of persons with disabilities must be aimed at maintaining healthy, productive, socially, economically and dignified lives. The government must guarantee the availability of health service facilities and facilitate people with disabilities to be able to continue to live independently and be productive socially and economically. The 2012 Susenas result found that the Indonesian population with disability was 2.45% of the total population of Indonesia where the figure was higher than the 2019 Susenas of 0.92% (Ministry of Health of the Republic of Indonesia, 2012).

Families who have adolescents with special needs, especially adolescents who are diagnosed with Cerebral palsy initially do not accept the condition of their children where there is a reaction of rejection, denial, neglect, mistrust and even unwillingness to care for child care until adolescents, causing secondary reactions in the form of guilt, anger and even shame for family members themselves. Cerebral palsy is a person with special needs that is quite severe due to permanent brain and sensory brain paralysis that occurs from the birth process continues to adulthood, (Hutton and Pharoah, 2006) Hutton said that life expectancy for Cerebral palsy in adolescents is increasing throughout the world, including adolescents with severe cerebral palsy levels.

Increased life expectancy of adolescent cerebral palsy is inseparable from the care of parents and family members related to communication patterns and climate within the family (LASMI PURNAWATI, 2018). The situation experienced by the family of teenagers Cerebral palsy brings its own psychological problems for parents and other family members, due to the level of problems of cerebral palsy children varying from the ability to move, maintain a balance of standing position to the function of independence in everyday life so as to contribute to the stresses of life of parents and family members. These conditions can affect family members' communication relationships, economic situations, daily lifestyle and plans and hopes for the family's future automatically facing different challenges. ((Pakula, Van Naarden Braun and Yeargin-Allsopp, 2009).

This situation causes physical fatigue and stress in family members to accompany and help their teenagers throughout the day in their activities, family members and parents of adolescent cerebral palsy children need resilience (care) to be able to adjust to the situation of adolescent Cerebral Palsy so as to facilitate family acceptance, sometimes emotions that change in family members during caring for children with cerebral palsy affect a decreased ability to regulate emotional intelligence. The ability of emotional intelligence is very useful for the release of stress and adaptive coping as a form of parental resilience (Devina and Penny, 2016)

The siblings of teenage children with cerebral palsy also experience psychological problems due to the condition of their siblings who have cerebral palsy. Both conditions are experienced by teenagers with cerebral palsy or their siblings demanding the ability of parents to make psychological adjustments. According to (Pozo, Sarria and Brioso, 2011), psychological adjustments made by parents include:

- a. Characteristics of young people with disabilities, which describe the ability of adolescent disabilities such as overall growth and development delays, communication skills, cognitive functions, and the ability to carry out daily activities;
- b. Social support, which illustrates that family satisfaction and parents of adolescents with cerebral palsy to community social support are related to personal welfare, more positive attitudes, more positive social interactions for;
- c. The perspective of the problem, which illustrates how the definition of family members of the problems experienced by the resilience of the family in the care of adolescent children with cerebral palsy;
- d. Adaptive coping strategies in cognitive and behavioral changes are constantly in an effort to overcome the internal and external demands that are tiring parents, where the results of previous studies indicate that coping plays an important role in reducing stress.

According to (Richards and Malouin, 2013), the effects and contributions experienced by parents and family members of adolescent children with cerebral palsy are difficult to measure, because of the emergence of certain emotions such as anger, sadness, feeling distrustful of what is happening, or feeling isolated. Communication of family members and interpersonal as well as social support from outside the family environment (community) can strengthen a family of adolescent cerebral palsy in regulating emotional intelligence and resilience of parental care of cerebral palsy children in the development and development of cerebral palsy children. (Mumpuniarti, Sukinah and Pujaningsih, 2017).

2. Problems

One of the family's problems is that much information is still needed systematically and scientifically through communication approaches in order to build psychological functions of the parents of cerebral palsy children so that they can fully function to provide complete services in helping their children who have limitations.

- a. How is the family communication network system in resilience in parenting adolescent cerebral palsy
- b. What is the role of social support and family knowledge sharing in the resilience of parenting adolescent cerebral palsy.

3. Research objectives

The purpose of this study is to describe the intervening forms of family communication behaviors in resilience, emotional intelligence in the climate of family communication, the role of social support in family maturity and psychological criteria of a good and prosperous family (Psychological well being) in parenting adolescent cerebral palsy children

- a. Analyzing the family communication network system in the resilience of parenting adolescent cerebral palsy.
- b. Analyzing the role of social support and family maturity in the resilience of parenting adolescent cerebral palsy.

4. Research Methods

In this paper the research method used is descriptive method with the Analysis of Communication Network theory where this research explains the relational data about communication flows analyzed using several types of interpersonal relationships as a unit of analysis. Descriptive method of network analysis places individuals in a click (Node) based on the proximity of their communication in a network link, so that individuals who are closer are assigned to the same click. Closeness of communication is the extent to which two individuals connected in a network have overlapping personal communication networks.

This study uses materials and analysis methods used in this study is to use literature studies that examine, break down to analyze literature and find various research variables with their relationship, as well as the results of previous studies, after descriptive analysis methods, researchers also will test a measurable tool with a sample of Family Members and Parents and the community as a communication network and to test reliability, In parallel, an in-depth interview method (Indepth Interview) will be conducted with several informants regarding the resilience of parenting adolescent cerebral palsy. Statistical analysis was performed using correlational tests and analysis of the proximity of network communications. as a design model of a cerebral palsy family communication system in enduring parenting adolescent cerebral palsy.

II. LITERATURE REVIEW

I. Communication

Interpersonal Communication

Effective interpersonal relationships are also characterized by effective communication, so that communication is not just about delivering the message but also determining the level of interpersonal relationships. The better the interpersonal relationships the more open people to communicate themselves make their perceptions about others and their perceptions more careful so that more effective interpersonal communication that takes place between communicants. Interpersonal communication according to De Vito is verbal and nonverbal interaction between two (or sometimes more than two) interdependent people. This relatively simple definition implies a variety of characteristics, (DeVito, 2016).

Meanwhile, according to Canary explained the definition of interpersonal communication is the exchange of symbols used to achieve interpersonal goals, this communication often occurs in the form of face-to-face interactions such as parent and child interactions in the family at dinner. Technology influences life both predictably and unpredictably. Due to technological advances, interactions today can not only be done directly, but can also be done via online media. When one considers that the influence the internet has (and will have) on people involved in a relationship, it is important to understand that people are new to applying it in their daily lives. The ten elements of maintaining interpersonal relationships in Canaries (Canary and Dainton, 2003) are:

1. Positivity is the attitude of making a pleasant interaction or giving praise.
2. Openness is talking and listening to each other. Couples open up and exchange ideas.
3. Insurance is the attitude of providing certainty or guarantee about the commitment of a partner.
4. Sharing tasks is the attitude of carrying out relevant tasks and work in a relationship together.
5. Social networks are the attitude of spending time to communicate and get acquainted with people around your partner.
6. Joint activities are the attitude of carrying out activities and spending time together.

7. Mediated communication is the attitude of communicating using telephone, technology, cards, and letters.
8. Avoidance is the attitude of avoiding couples in certain situations or issues. For example, respecting the privacy of a partner.
9. Antisocial is an attitude that is not friendly or uses violence on a partner. For example, making a partner feel guilty, then showing unfriendly attitude when a partner does not pay attention.
10. Humor is the attitude of using various kinds of humor to make the atmosphere enjoyable. For example giving a unique call or just telling funny things to your partner.

Meanwhile Jalaluddin Rachmat, summarizes the development of interpersonal relations into three stages only (Rachmat, 1998):

1. Relationship formation : This stage is often referred to as the acquaintance stage. The focus at this stage is the process of delivering and receiving information in forming relationships. The information obtained is not always through verbal communication but also through nonverbal communication.
2. Affirmation of relations : Interpersonal relationships are not static but are always changing. To maintain and strengthen interpersonal relationships, certain actions are needed to restore balance. There are four important factors for maintaining balance, namely intimacy, control, the right response and the right emotional tone.
3. Termination of relationship : Even the most harmonious interpersonal relationships can be terminated, maybe because of death, maybe because of unresolved conflicts and so on.

Family Communication

Family communication is related to the process of communication and family relations which is a relationship of communication behavior between family members. This theory originates from a number of different scientific disciplines based on various methodologies ranging from critical theory to scientific theory.

- a. Critical Theory of Family communication : This theoretical approach has a relatively small role in family communication because of its focus on individual oppression and emancipation. usually draws parallels between family relations and other social relationships that define social power structures, such as the way governments limit individual freedom and choice, describe greater social relationships and power structures affect family relationships.
- b. Scientific Theory of Family communication : This theoretical approach is to find out about human relations, in general to see behavior so that the theoretical model can be generalized quantitatively while qualitatively understanding it as a way of social processes that reflect objective reality. In a family context where interdependence and influence each other according to the role in the family so that changes in one member affects all other family members. (Littlejohn, 2009, Saudi, 2018)

Family communication is creating, sharing and managing meaning in interactions between family members as a process of ongoing, complex communication, changing activities from the past to the reality of family members into the future (Chris Segrin, 2005). In family communication must be understood as a whole not only as reciprocal communication but also focus interpersonal communication into the attention of family members on family partners such as child and parent communication, communication between marriage partners, so that in family communication encourages interpersonal communication into focus group communication on the interaction of fellow family members so that it makes the main construction in organizing, not only seen in the context of communication.

Family life occurs because of the inability to improve their relationships as individuals and the inability to take responsibility for the problems of a family relationship that is commonly called a reactor, while the actor is another person who acts and is believed to make the desired relationship changes to an individual, all family members can become actors or reactors, so that family communication is understood as the creation of openness among family members rather than domination of one of the dominating family members (Kathleen M. Galvin, Dawn O. Braithwaite, 2016). Openness is needed in the process of providing communication patterns for adolescents so that they can be good role models, as well as inviting teenagers to be more open in their development. Therefore, optimal attention, care, attention and communication are needed from parents to correct the child's perception so that the child is not afraid. (Baharudin, 2019)

Social Support

Social support is social interaction that encourages or inhibits individuals from behaving collectively so that they can better analyze how friends, family and other closest people who have an impact on the same person in the group are affected in making appropriate interventions. The characteristics of social support communication networks that must be considered in terms of size and number of group members; frequency of

communication intensity and bond strength between group members; the level of closeness to recognize each other and the resources and social support that is exchanged between members (Servaes and Lie, 2008).

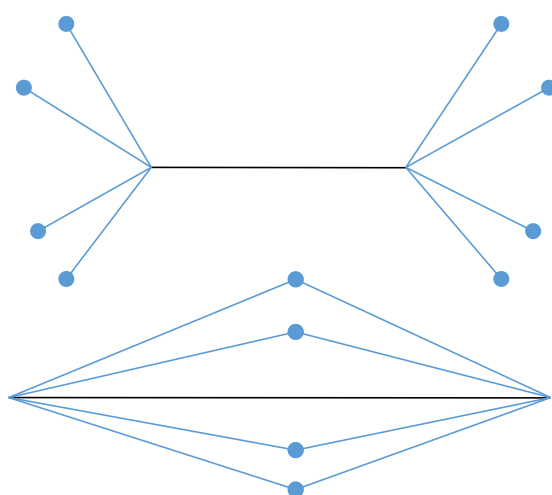
Other forms of social support that are exchanged through interpersonal social relationships are characterized by four types of supportive action in the form of support: emotional; instrumentals such as service support; judgments such as feedback and constructive criticism; Information in the form of suggestions. Social support includes family concepts related to the involvement of personal good relationships with diverse outcomes such as health and well-being, including increased life span, physical and mental health, recovery from illness, better quality of life that is part of social science and health sciences. : Integration and social support networks; Availability of perceived social support; Enforce and receive social support. The science of development communication is very close to this field, development communication creates and maintains social networks and social structures that emerge from communication interactions.

Perceptions about available social support are part of the perceptual scheme in the social world. Enforcement and acceptance of support often involves communication and conversation as part of the influence of social support in responding. Perceived social support refers to the beliefs of attention, appreciation and part of a social support network that helps each other. (Littlejohn, 2009). The social world as a buffer that supports individuals from stressful life events where others can lead us to assess the state of life because it reduces the level of stress, when experiencing stress. Perception that other people are there to help us seek help and evaluate others positively so we need to get adaptive treatment facilities.

From various definitions of social support, the authors define Social support as part of social interaction closely related to communication in providing support often involving responsive communication and conversation. The perception of the availability of social support is also part of assessing relationships as part of trust, intimacy, acceptance and responsiveness which are parameters of relational quality that satisfy basic human needs and create an environment conducive to dealing with emergent stress or disappointment; conflict and distress. Communication theory proves to be useful in understanding how individuals structure and interpret supportive communication, some support efforts are more successful than others, and how supporting resources and information flow through social channels.

Communication network

Communication network analysis method is a research method to identify the communication structure in a system, where relational data about communication flows are analyzed using several types of interpersonal relationships as a unit of analysis. The network analysis method places individuals in clicks based on their proximity in the network link, so individuals who are closer are assigned to the same click (Rogers, 2003). Closeness of communication is the extent to which two individuals connected in a network have overlapping personal communication networks (Richard D. Alba; Charles Kadushin, 1976).



Picture. 1
Closeness of Communication

Personal communication networks consist of interconnected individuals who are connected by communication patterns that are patterned to specific individuals. Network-related individuals are important determinants of innovation adoption. The interrelation of individuals in a social system is positively related to individual innovation. Interrelation is the extent to which units in a social system are connected by interpersonal networks.

Focused individual behavior is partly determined by the information and influence that is communicated through the individual's personal network. Some private networks consist of a group of individuals who interact with each other; this is a private network that is interrelated. This network communication structure consists of clicks in a system and interconnection of communication between them through bridges and links.

Cyber Extension

Cyber Extension is a new innovation communication media that is hybrid and convergent that utilizes internet networks, communication through computers and digital interactive multimedia to bridge the process of transforming new science and technology in agriculture quickly (Praza, 2016). Whereas the understanding of another Cyber extension is the mechanism of agricultural information exchange through cyber areas, an imaginary space - the virtual behind the interconnection of computer networks through communication equipment. This cyber extension utilizes the power of networks, computer communication and interactive multimedia to facilitate the mechanism of sharing information or knowledge (Wijekoon et al. 2009). (Sumardjo, Lubis and Pandjaitan, NK, 2010)

II. Psychology

Family Characteristic

According to Bornstein family characteristics that affect the dynamics and style of family parenting that have an impact on (Berns, 2012):

1. Size (Number of Siblings) : Both parents and children are influenced by the number of family members. The more family members, the more interaction in the family, but the less likely the interaction of parents with children. Children in extended families have many resources to share, playmates, and emotional security and have responsibilities in the form of assignments or caring for younger siblings. It is different if parents in larger families, especially those who have limited living space and economic resources, tend to be more authoritarian, tend to be more likely to use physical punishment, and tend to explain their rules less than parents from small families.
2. Configuration (birth order, distance, and sex of siblings) : When raising a child is not only influenced by the number of children but the birth distance and sex of siblings also affects the interaction of old charcoal with their children, each birth of a family member has a different character; different ages and new relationships parents have to deal with, as well as when family members begin to mature or there are other relatives (grandparents) who live with the nuclear family become patterns of authority and relationships among members change. Eldest children receive much attention, affection and verbal stimulation compared to their siblings who are born later (second child) making them more disciplined and forced by their parents, because they experience more parent-child interaction so that their relationships become more loving.
3. Parents' Life Stages : Six stages of parental change in their expectations and practices for caring for children from infants to teenagers:
 - a. Imagination and ideals in nurturing while still in the womb
 - b. Care from Baby to adolescent,
 - c. Authority, Give authority and responsibility to children,
 - d. Interpretative, giving room to express personal opinion,
 - e. Interdependence, parents and children are interdependent with each other
 - f. Departure, releasing children from living life independently.

Parents of children also experience changes in relationships with their own parents, various studies have shown that parental relationships with their own parents over time and today influence on their parenting practices. For example, a mother who has a comfortable relationship as a child, turned out to have a good model to emulate the influence of childcare practices ranging from infants to adolescents.

1) Quality of Marriage

The quality of marriage contributes to the development of children where parents form agreements in joint care, cooperation and support for one another. Where his father who is involved in the care and care of his children is produced better socially and academically than his father plays the role of care marginally. That parents will argue in solving problems and be competitive when caring for their sons and have different involvement with their daughters.

Marriage conflict may be so frustrating for parents that they become less able to respond to children's emotional needs and diminish parenting skills. Marriage conflicts that lead to divorce cause major disruptions in relationships between all family members. Divorce affects the parenting style of foster and non-foster parents, parents who get custody usually mothers become more authoritarian and restrictive, whereas parents without custody usually fathers become more permissive and patient, at least initially. This major disorder also affects children's behavior, which becomes more aggressive, rebellious, and manipulative (lying).

2) Ability to deal with stress

Parents who are tired, worried, sick and those who feel lost control of their lives tend to be impatient, lack understanding and do not want to negotiate with their children. When parents are busy with tasks, they become less responsive to their children, tend not to play games, not talk, do not help activities with their children, even more criticizing and authoritarian towards their children. Real life stress effects such as divorce, illness, death, harassment or economic problems have an impact on parent interactions with children.

The number of crises experienced is found to be the main cause of a mother's frustration. that the more often a mother is easily offended, the less likely it is to be able to solve problems in the family, so that problems that increasingly accumulate and an increase in ongoing stress, resulting in disturbed interaction between family members makes the intolerant character that foster antisocial behavior in their children . Likewise, the relationship between a father and his job loss with violence in the family, including abuse of a partner and even abuse of children, due to the amount of time parents spend at home increases the likelihood of family conflict; increase in head of household; cover self-esteem as the head of the family and lose the income earned (Lynn Okagaki, 2006)

Parenting

Ronald Preston Rohner explains the PARTheory theory (Parental Acceptance-Rejection Theory), (Rohner and Khaleque, 2014) is trying to explain and predict the main consequences of the consequences of acceptance and rejection of parents from the development of attitudes, cognitive, and emotional for the personality maturity function of children. The dimension of care consists of two, namely acceptance and rejection (Rohner and Khaleque, 2014).

1. Acceptance dimensions include:

- a. Physical affections such as kissing, hugging, warm,
- b. Verbals like respect, respect, and say pleasure.

2. Dimensions of Rejection include

- a. Cold attitude, can be physical and verbal. Physical rejection, such as rarely kissing, rarely hugging, no warmth. While verbally, for example, lack of respect, lack of respect, less saying feeling happy and others
- b. Aggression or hostility, aggression or hostility can be shown both physically and verbally. For example, hitting, punching, injuring, hitting, pinching. While verbally for example cussing, sarcasm (sarcasm), disparaging, saying not care, say do not like, say not happy, and others.
- c. Waiver. indicated by the lack of parental attention to the needs of children both physically and psychologically. Rejection is reflected by the child feeling unloved, unappreciated, and unnoticed.

Parenting Resilience

Brooks (Sam Goldstein, 2013) Defines caregiving as a process that refers to a series of actions and interactions that families take to support child development. Parenting is a process of interaction between family members and parents and children who are influenced by the culture and social institutions in which the child is raised, so the nurturing process is not a one-way relationship where the family and parents influence the child. Parenting is a long process that includes several things, namely (Berns, 2012):

- (1) Interactions between children, parents and other family members and the surrounding community;
- (2) Adjusting children's needs with parents;
- (3) Fulfillment of responsibilities to raise and meet the needs of children;

- (4) The process of acceptance and rejection of the existence of children;
- (5) The process of reducing risk and protection of individuals and their social environment.

Parenting is a difficult and complicated task, especially caring for children with special needs is far more difficult and complicated in caring for them (Heward, 2008). Most parents understand the anger and cries of children aged 2 years because they want something, different care with the age of 10 years, parents and families often give a look of dislike and commented on their children. So that many parents and families from time to time increasingly difficult in terms of childcare.

Especially for parents of teenagers with disabilities they have more difficulties and complications. Among other things to replace the diapers of teenagers with disabilities. Parenting a child with a disability that is far more complicated and difficult, he also tends to get great psychological pressure on parents and family, resulting in disturbed family interactions (Berns, 2012).

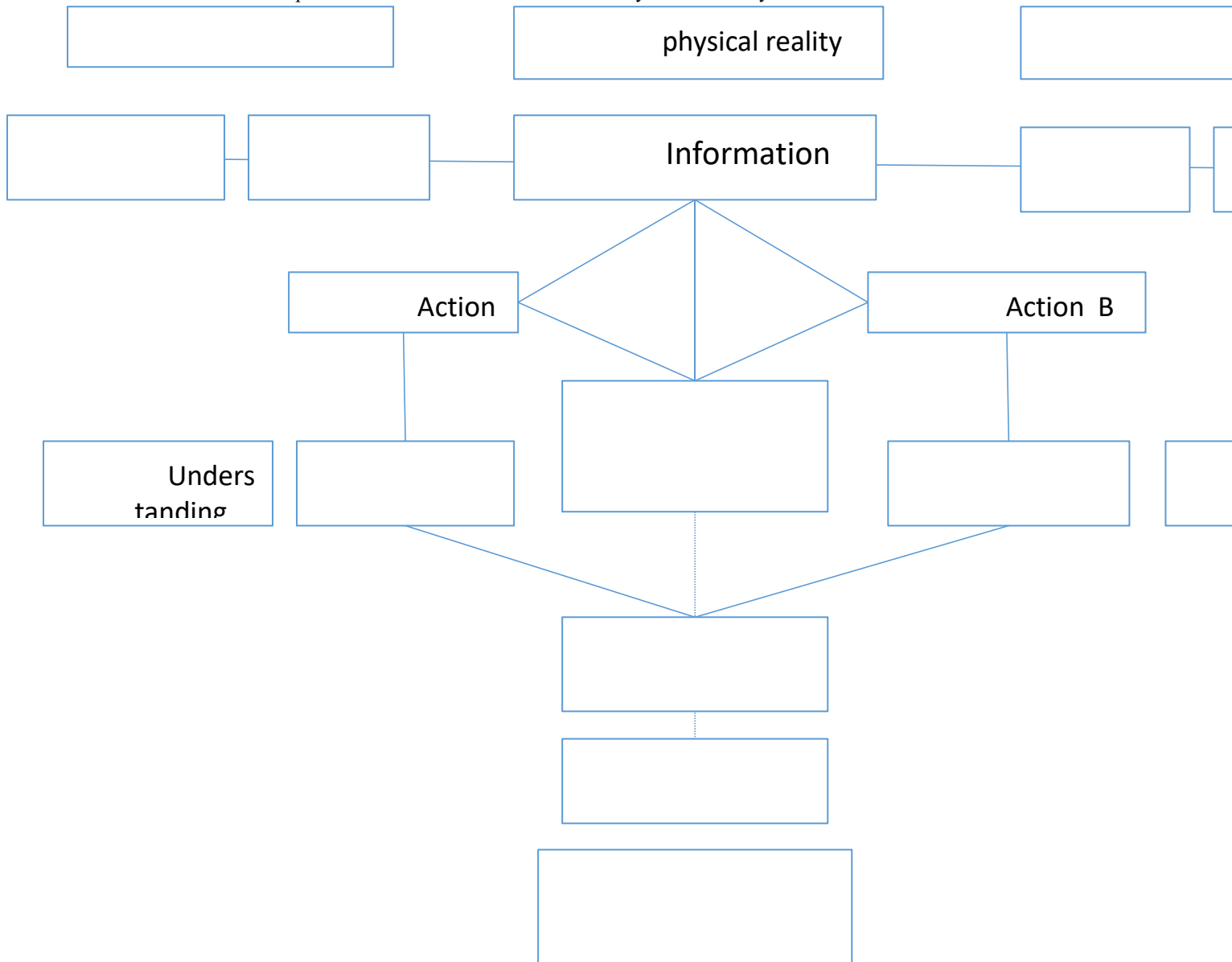
Disability in a child influences family dynamics and parenting styles. The nature, condition and severity of disability, and the availability of support systems, are factors in how parents cope. The reaction of parents to the diagnosis of disability varies greatly; they may include sadness, depression, and / or guilt (Bornstein, 2002). Other common reactions for parents of children with disabilities are anger - anger toward God, fate, society, professional, self, other parents, or even the child himself. In addition, parents may also experience frustration when they seek an accurate diagnosis or referral about a child who has a problem that cannot be identified easily.

Parents of children born with disabilities allow a loss of self-esteem, which greatly impacts children born with disabilities as excessive protection, rejection or abuse, so that children experiencing ambivalence sometimes feel compassion and sometimes feel anger. The frustration of caring for teenagers with disabilities increases everyone's patience, parents worry about their care, costs and future, this pattern of care can lead to marital conflict, neglect of other children / siblings and disruption to the family. (Berns, 2012)

Society expects parents to love their children. When parents experience negative feelings at the birth of a child, the parent usually feels guilty. Unable to accept their own feelings of rejection or animosity, parents may blame themselves for experiencing emotions that are incompatible with good and loving parents, especially parents of children who need special love and attention.

III. RESULT AND ANALYSIS

With this innovation communication convergence model, there is integration between the needs of adolescent family Cerebral palsy (Psychological Reality A) with the needs of related parties such as government, medical rehabilitation, community (Psychological Reality B) encouraging each party to interact and communicate proactively and anticipatively through sharing knowledge (Knowledge Sharing) that support each other and mutually strengthen efforts to meet the needs of each party. Thus an acceleration occurs in the provision and use of innovation effectively and efficiently

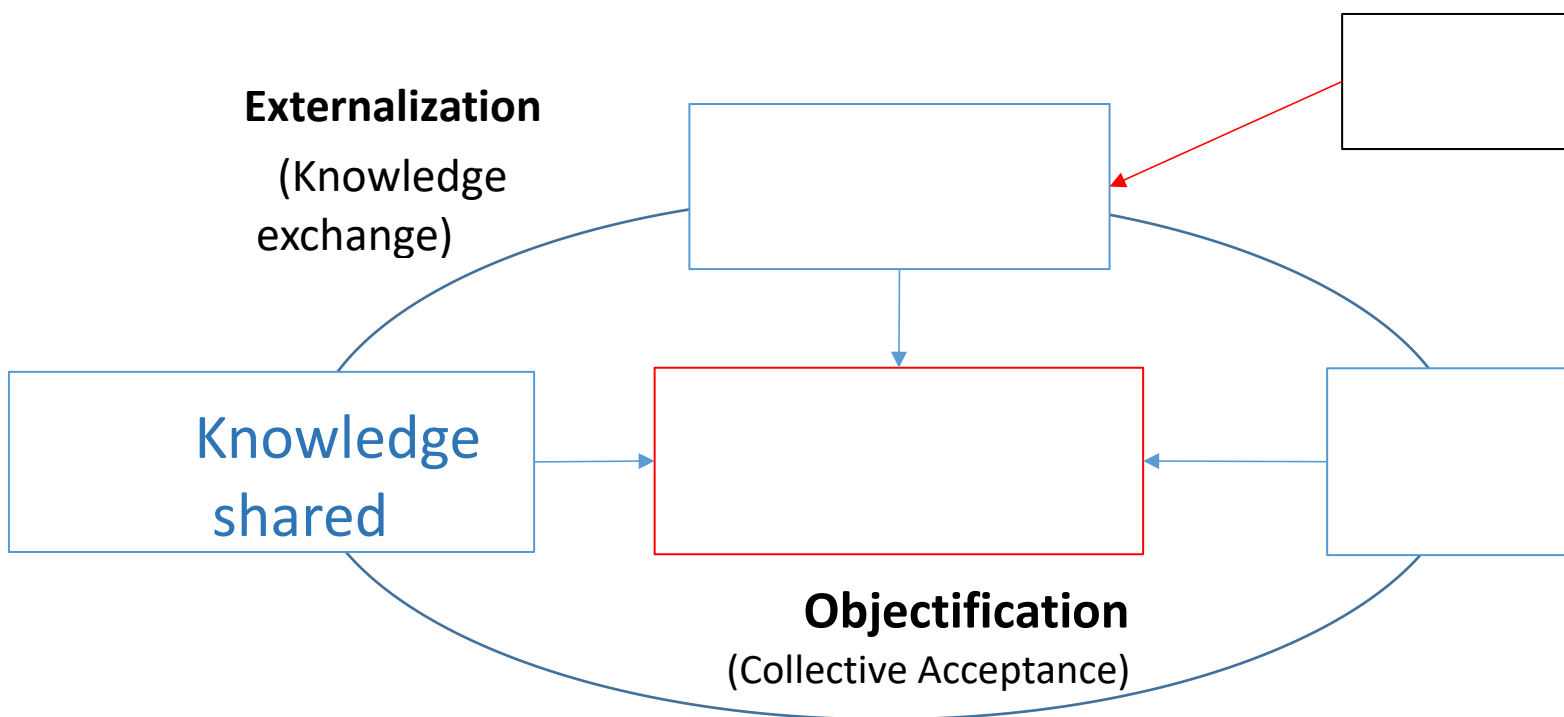


Picture. 2

Convergent communication model (Roger & Kincaid, 1981)

This convergent communication model provides a common perception of the resilience of parenting adolescent cerebral palsy through consensus and mutual understanding that results in collective / community action from the exchange of information received from family members and parents with related parties such as the Government, medical rehabilitation, community and environment around it, communication interactions are caused by differences in the value of trust in parenting adolescent cerebral palsy between family members and parents towards related parties, forming each other's understanding as well.

Based on differences in understanding and the value of trust this is why a consensus (mutual agreement) occurs in the resilience of parenting adolescent cerebral palsy. Thus the reality in the community also changes due to proactivity in sharing knowledge (Knowledge Sharing),

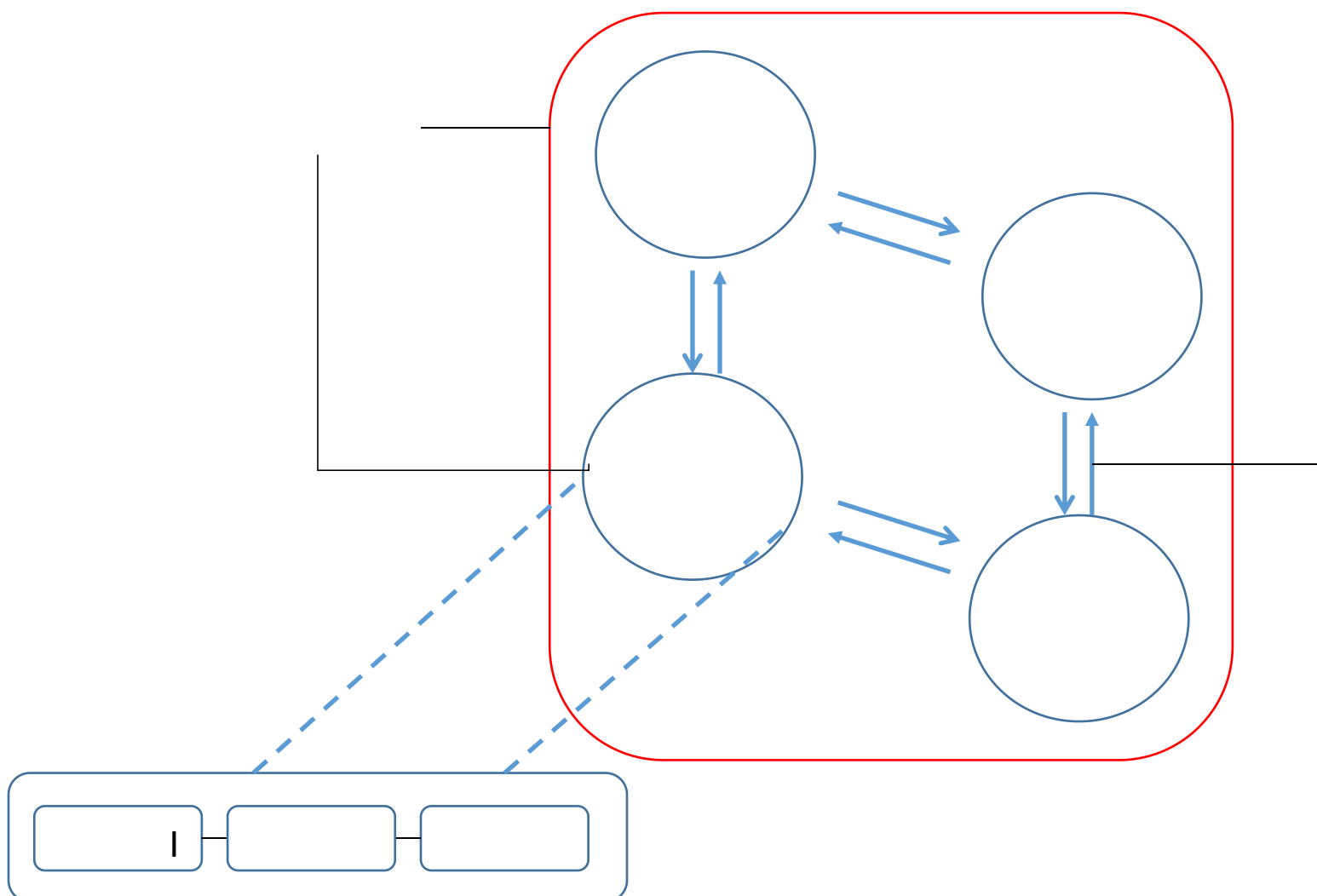


Picture. 3
Cycle of sharing cerebral palsy family knowledge (Soemardjo, 2010)

The sharing cycle of cerebral palsy family knowledge is as follows: Innovation (individual knowledge; organizational knowledge; shared knowledge; Innovation (knowledge creation) and external knowledge then internalizing and externalizing the cerebral palsy family, namely:

- a. Individual knowledge: knowledge of family members and parents of cerebral palsy adolescents to the endurance of nurturing and physical & non-physical development of adolescent cerebral palsy,
- b. Inclusive External Knowledge consists of
 - Internalization: The search for knowledge through experience, consulting doctors / medical rehab therapy, the internet
 - Externalization: Exchange of knowledge through Social Media, Joint Therapy, Media with the community or family
- c. Knowledge Organizations include government, NGOs, Community of Cerebral Palsy parents, Doctors & Therapists, Medical Rehab
- d. Innovations (Knowledge creation) such as treatment and parenting patterns of teenagers with Cerebral palsy

The role of social support and family maturity in the resilience of parenting adolescent cerebral palsy in the characteristics of the cerebral palsy family environmental system



Picture. 4
Characteristics of a cerebral palsy family environmental system

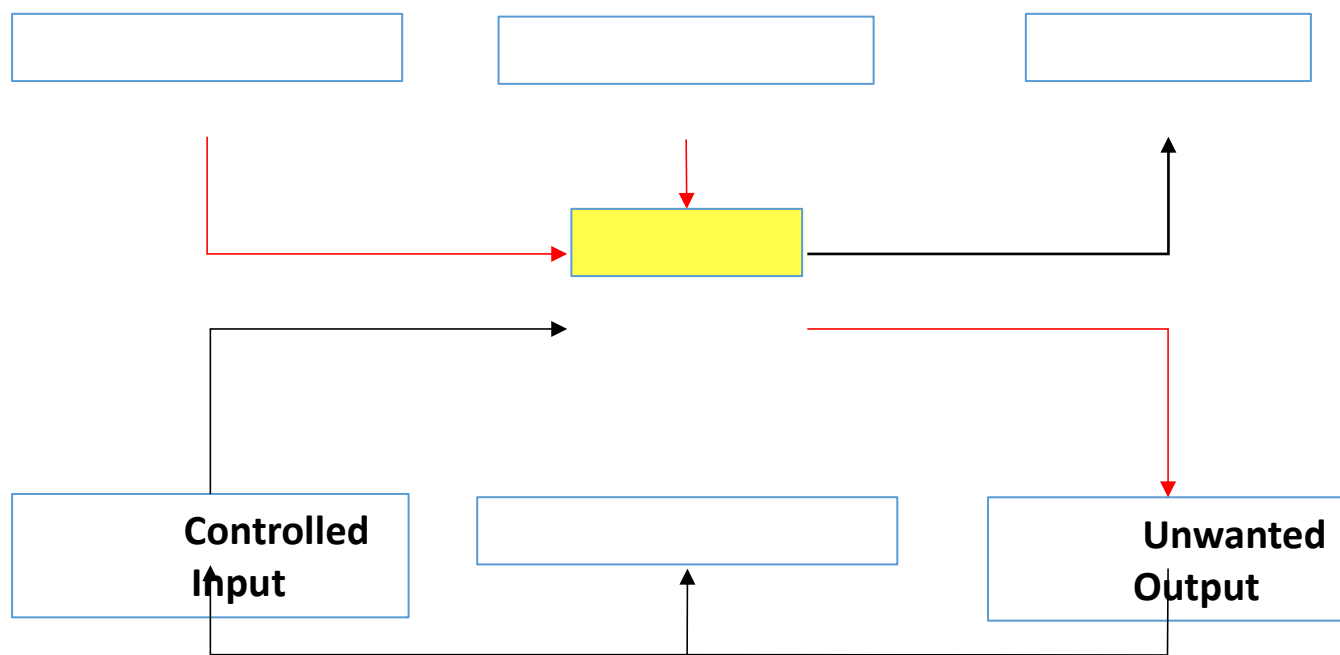
Development of the Cerebral Palsy Family environment system in the Cerebral Palsy family communication system involves parts in a network subsystem that are interrelated in a single family communication network of cerebral palsy adolescents, where each part related as a subsystem has different tasks and functions, so has a need for innovation in care and therapy in different forms, formats and types. Innovations are needed so that the inputs that will be utilized produce outputs for related subsystems. As a system, there are at least elements or characteristics that can be identified from the communication information network system, namely (Sumardjo, Lubis and Pandjaitan, NK, 2010):

1. Boundary (boundary) is an area that limits between a system with other systems or with the environment outside. This system limit allows a system to be seen as a single unit. The limit of a system shows the scope (scope) of the system. With this system boundary, the system can form a unity, because with this system boundary the functions and tasks of one subsystem are different but still interact with each other. In other words, this system boundary is the scope or scope of the system / subsystem itself.
2. Environment (environment): Everything outside the system boundary that affects the operation of a system (therapist technique; health technology). Environment outside the system (environment) is anything outside of the system boundary that affects the operation of a system. The environment outside this system can be beneficial or detrimental. Favorable external environment must be maintained and

maintained so as not to lose its influence, while adverse environment must be destroyed and controlled so as not to interfere with the operation of the system.

3. Input (input): Energy that is entered into a system to be processed in order to produce output in the form of innovative information needed by the form, type and format and distribution media in accordance with the main tasks and functions of each related sub-system.
4. Process - Output (output): Results that can be in the form of behaviors, resources, reports that are displayed digitally generated for the system environment by the activities of a system based on the desired output or unwanted output
5. Liaison (interface): The place where components or systems and their environments interact are illustrated in the cause-and-effect diagram of the relationship between the components of the communication system. Liaison system is a media liaison between one subsystem with other subsystems to form a single unit, so that resources flow from one subsystem to another subsystem. In other words through this link the output of a subsystem will be input from other subsystems.
6. Sub-systems are identified as input in each element for the four subsystems of categories, namely Medical Rehab Sub-system, Community Sub-system, Family Sub-system, Government Sub-System

The characteristics of cyber extension work systems are known to be boundaries, environment, input, output, process components, storage and interface of the system of the implementation of cyber extensions where the implementation is an innovative communication method using new communication media that integrates information technology tools to accelerate to the family of teenagers cerebral palsy, it is necessary to do a system analysis that takes into account the desired outputs and unwanted outputs.



Picture. 5

Pattern of communication network analysis of cerebral palsy family innovation black box approach

Associated with the communication network analysis pattern of cerebral palsy family innovation black box approach (NGO / Community → teen family cerebral palsy → medical rehab → government) it appears that: (Picture.5)

1. Uncontrolled input to the analysis patterns of family innovation communication networks including:
 - a. The quality of HR in the family environment of teenagers in Cerebral Palsy.
 - b. Family's socioeconomic status
 - c. Network system user behavior (Cerebral Palsy family)
 - d. The role of the cerebral palsy community
 - e. Behavior of NGOs
2. Controlled Input is input that can be controlled by Cerebral palsy family such as:
 - a. Growth and Development Clinic
 - b. Medical rehabilitation doctor
 - c. Innovative communication program or activity

- d. Infrastructure facilities and budget for health communication activities (Therapist parents of teenagers cerebral palsy unitascommunity)
- 3. Environmental Input
 - a. Kep. Ministry of Health No. 263 / Menkes / SK / II / 2010 concerning Guidelines for Cognitive rehabilitation
 - b. SDGs 2030; Objective 4. Quality Education): Ensuring inclusive and equal quality education, also supporting life-long learning opportunities for all
 - c. ICT network infrastructure (Social Media, Group Communication)
 - d. Community traditions & culture
- 4. Management
 - a. Development of ICT-based management information systems
 - b. Regular monitoring and evaluation mechanism for the results of Cerebral Palsy therapy
 - c. Capacity building of communicators (Cerebral Palsy Teen Parents) in the ICT application field
 - d. Strengthening the innovation information database system on Cerebral Palsy's youth history
- 5. Black Box
 - a. Communication Convergence
 - b. Program Synergy and Integrity
 - c. Interface element System
- 6. The desired output
 - a. Report on the results of the Therapist and Medical Rehabilitation Consultation
 - b. Article for publication
 - c. Appropriate technology information
 - d. Information management guide
 - e. Abstract / List of latest magazine contents
 - f. Information on research results offline and online
 - g. Information Search Results
 - h. Printed and electronic journal
 - i. Cerebral Palsy's world information site
 - j. Dynamic Cerebral Palsy Therapy Innovation Communication System
- 7. Unwanted output
 - a. Social problems and cultural reduction (stereotypes)
 - b. The social gap between those who have access to ICT (Social Media) applications and those who do not.
 - c. Overload information so that it cannot be organized and managed as needed

The expected output is usually generated from meeting the family needs of the cerebral palsy adolescents specified in the needs analysis step. While the unexpected outputs are generally in the form of impact and may be dangerous related to the innovation of the communication network information system of the family's cerebral palsy innovation.

Controlled inputs include growth and development clinics, medical rehab doctors, cerebral palsy family innovation communication programs, infrastructure and health communication budget activities (Therapists - Cerebral palsy adolescent families - Community) which are included in the system, information on cerebral palsy family innovation needed with the form, type, and format as well as the distribution media in accordance with the main tasks and functions of each related section.

Whereas uncontrolled inputs include the quality of human resources of network system users (Cerebral palsy family community), socioeconomic status of the family, network system user behavior both community or cerebral palsy families, the role of cerebral palsy community, the behavior of non-governmental organizations (NGOs).

Both inputs have an influence on the black box analogous to the communication network information system of cerebral palsy family innovations, including in the form of legislation, in accordance with SDGs; objective 4 (quality education): ensure inclusive and equal quality education, also support life-long learning opportunities for all, ICT network infrastructure (Social Media, Group Communication), Traditions & community culture

Output consists of two categories, namely expected output and unexpected output. Expected output (by design), generated through certain activities and output targets that have been set or planned.

The main output expected from the expected results of managing the information communication network system is the fulfillment of information needs of cerebral palsy family innovations in a sustainable and effective manner. Expected outputs include Therapeutic Reports and Medical Rehabilitation Consultation Reports, Articles for publication, Information on appropriate technology, Information management guidelines, Abstract / List of latest magazine contents, Information on offline and online research results, Information Search Results, Printed and Electronic Journals, Cerebral Palsy's world information site, the dynamic Cerebral Palsy Therapy Innovation Communication System

Unexpected output is an unexpected negative result that occurs simultaneously with the expected output in communication of cerebral palsy family innovations such as: Social problems and cultural reduction (stereotypes), Social inequalities between who have access to Social Media applications and those who do not, Overload information so that it cannot be organized and managed according to the needs of family members and parents and the family cerebral palsy community. Even so access to information on computer information technology through social media is really useful and increases the resilience of cerebral palsy in a sustainable way.

IV. CONCLUSION

One of the problems of the family of cerebral palsy teenagers is that they still need a lot of information systematically and scientifically through counseling or counseling approaches in order to build psychological functions of parents of cerebral palsy teenagers so that family members can function fully to provide complete care to family members who have limitations, so families of cerebral palsy adolescents need online and offline counseling so that in the future counseling can make a major contribution to the resilience of parental adolescent cerebral palsy for family members and parents of cerebral palsy teenagers.

Information and counseling technology and therapists are increasingly developing at all times requiring interventions for reliable and optimal quality cerebral palsy families. Optimization of cyber extension can be done in several ways such as: Training of independent therapist skills through computers and the internet for family members and parents, families of cerebral palsy teenagers are given broad access to information about information on growth and development and care for adolescents through computer information technology such as social media, where the spirit of information sharing is also developed both by the cerebral palsy family community, therapists, medical rehab doctors and the government, because when there is no sharing of experiences among cerebral palsy families who succeed in resilient care for adolescent cerebral palsy children there will be no development of new strategies that can be followed by other cerebral palsy families.

Cyber extension in innovation communication network information systems involving parts in interconnected network subsystems in a unified innovation network information system has each different task and function so that it has a need for innovation counseling in the form, format and type different.

Synergy between one subsystem with another subsystem, according to the characteristics of the system, the system works within a specific scope or boundary and is influenced by the surrounding environment that produces output that is stored permanently or temporarily. The connecting system is an element to guarantee the synergy between subsystems in a good cyber extension work system, Cyber extension is an innovative communication method using new communication media that integrates information technology advice so as to speed up information to the families of cerebral palsy teenagers.

Analysis of the system with black box theory provides an overview of the system by paying attention to the desired outputs and unwanted outputs. The mechanism for providing relevant and up-to-date inputs is balanced by the socialization of the use of information technology (social media) by the families of cerebral palsy teenagers in accessing information as needed as one of the efforts to optimize cyber extensions so as to support the resilience process of cerebral palsy adolescent teenagers.

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