

# THE EFFECT OF SELF EFFICACY AND SOCIAL SUPPORT FOR CANCER PATIENTS OF C-TECH LABS EDWAR TECHNOLOGY RESILIENCE

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## Abstract

According to data from the Indonesian Health Research in 2013, trend of cancer as Non-communicable Disease increased from rank of seventh in 2007 to the second as the leading cause of death in Indonesia. Treatment of cancer itself have many impacts not only physically but also psychosocial for patients (Costanzo, Ryff, and Singer, 2009). Cancer patients are struggling to deal with uncomfortable and difficult situations in their lives, this terminology is known as resilience. Being resilient patients, they can manage many difficulties and challenges with coping successfully (Waugh, Thompson, and Gotlib, 2011). The aim of this study is to examine the effect of self-efficacy as an internal source and social support as an external source for cancer patient's resilience. This study were involved approximately 123 cancer patients in C-Tech Labs Edwar Technology. Data analysis method has been used in this study was multiple regression. The result shows that there are a significant effect of self-efficacy and social support to resilience of cancer patients. Minor hypothesis test shows that mastery experience, the ability of individuals obtained by combining cognitive, behavioral, and self-regulatory to determine the pace in achieving something, has significant affect on resilience positively. While tangible assistance, the real help given directly to individuals who receive assistance such as services, financial assistance, and other necessary, has significant affect on resilience negatively. Based on the findings, cancer patients should encourage themselves in learning with cancer support group.

**Keywords:** Cancer patients resilience, self-efficacy, social support, non-communicable disease.

## Presenting Author's biography



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Cancer is a disease caused by dysfunction in human’s DNA, which function is to control the growth and reproduction of cells (Taylor, 2009). Unlike the other cells, cancer does not provide any benefit to body of human. Cancer also has chronic effects and require intervention to reduce its severity. The diagnosis of cancer and its treatment becomes matter that is regarded as detrimental and traumatic experience for the sufferer (Hou, Yin, Law, and Fu, 2010).

According Indonesian Health Research in 2013, trend of cancer as Non-communicable Disease increased from rank of seventh in 2007 to the second as the leading cause of death in Indonesia. The number of cancer patients is addition to cervical and prostate amounted to 1.027.763 include men and women. The highest prevalence of cancer in Indonesia is in D.I. Yogyakarta (4,1% per-mile). It tend to be higher in women than men with the highest group is people above 75 yearsold.

Belcher (2011) in his study claimed that cancer is a ‘we disease’, due to the impact of cancer is not only affect the patients themselves but also the others who are in a same system with patients. The lenght of time required for cancer patients undergoing treatment process will have an impact on the daily life of these patients. These impact are both physical and psychosocial such as mental health function decline, some aspect of psychological well-being, relationship with closest people, and daily activity (Costanzo, Ryff, and Singer, 2009).

To undergo the process of treatment, cancer patients have option that can be taken in form of medical methods such as surgery, chemotherapy, and radiation (Sarafino, 2011), as well as alternative methods such as drinking herbal medicine or tries appliance recent studies such as those offered by C-Tech Labs (Center Research Laboratory of Tomography) Edwar Technology, known as Clinic of Edwar. C-Tech Labs Edwar Technology is a placed of research to develop cancer killer tools established by Prof. Dr. Warsito Purwo Taruno, located in Alam Sutera – Tangerang. Clinic of Edwar scan the level of malignancy of the cancer cells and the volume of the cancer itself using ECCT (Electro Capacitive Cancer Treatment) volt that will attack cancer cells while doing cleavage.

In order to know phenomena in cancer patients in Clinic of Edwar, researchers conducted elicitation by using methods such as observation, interviews, and follow the course of the Focus Group Discussion (FGD) conducted by other researchers also are doing research on cancer patients in Clinic of Edwar, against total of 18 cancer patients. From elicitation process, the reasons found of cancer patients treated in Edwar is to avoid surgery, limited funds to carry out medical treatment, or have done various treatment but has yet to show progress in his condition. Cancer patients who seek treatment in Edwar also come from various regions in Indonesia in order to undergo treatment. Struggle and persistence of cancer patients to undergo treatment for the sake of healing eventually attracted the attention of researcher. Amid such a difficult situation such us being cancer, cancer patients still struggling to deal with an uncomfortable situation in their lives. This is known as resilience.

Resilience is a well mental management by the individual to face the challenges and difficulties daily, and the ability to navigate the changes of the individual in adapting to circumstances (Waugh, Thompson, and Gotlib, 2011). Resilience is formed because of the success of coping in small daily stressors, other than that resilience is also the protection that individual can use to avoid the pathological. Some studies have explained that there are various factors shown to affect the resilience itself such as psychological flexibility, coping strategies, social support, affect, perception, brave, confident, self-efficacy, communication process, positive cognitive triad, practice and learning, determinant, believe and faith, hope, attachment parents to children, and the family belief system. But on this study researchers focused on two factors that influence the resilience of the self-efficacy and social support.

Self-efficacy is a reflection of individual personal assessment of a person's ability to behave in accordance with the desired individual (Khan, 2009). In addition, self-efficacy predicted pace, assessment after completing a difficult task, and the ability to accomplish a thing even in sickness (Waldrop, et al., 2011). Anderson (2006) suggest that self-efficacy is the belief in human's ability to continue to take the steps necessary for activation of self-regulation and mediates the effect of treatment on physical activity. Cancer patients with high self-efficacy has hope for coping, and feel that they are able to face challenges and resolve their stressors such as cancer. While those with low self-efficacy find it difficult to cope with difficult situations (Bandura, 1995).

Besides self-efficacy, other factors that affect the predictable of resilience are social support. Social support is a very strong coping resources and influence to stressful experiences in life changes (Misra, Crist, & Burant, 2003). Social support raises hopes, improve self-confidence, and a buffer people from falling down when faced with loneliness and stress (Harel, Shechtman, & Cutronal, 2011). Social support also reduce the need for individuals to self-defense that often cause conflicts within the individual and increases the ability to meet the challenges that contribute to the personal growth and well-being (Harel, Shechtman, & Cutronal, 2011).

### **Resilience**

Resilience is needed by each individual because one thing for sure is that the problem will always come in the span of human life. Resilience is also composition for happiness and success (Reivich and Shatte, 2002). Goldstein and Brooks (2005) formulate resilience as an ability possessed by individuals to continue live, after going through difficult circumstances that make such individuals so depressed should seek all the capabilities it has. Effort and ability were carried out by individuals in the process of removing themselves from difficult circumstances often make the individual run out of energy. Resilience is a term used to refer to an individual's capacity to face the challenges that come in the span of his life; it makes people have the opportunity to develop a psychological aspect on his way to face these challenges. By having resilience, people can recover from the stress his faces and be able to adapt positively to the various obstacles in his life well that has happened in the past and the obstacles he is facing at this time. The process of resilience may reflect the natural power of the individual, and the individual can make an increased focus on understanding the factors that protect and continue the functions of life in the future.

### **Self-efficacy**

Self-efficacy refers to an individual's belief about the ability to organize and carry out the necessary action to a situation. Self-efficacy of the individual influence thinking, feeling, motivate themselves, and act according to the circumstances it faces. Self-efficacy is a type of system that is consistent in showing a significant contribution to individual motivation and achievement (Bandura, 1995). Self-efficacy is a competencies include the quality and range of cognitive and behavioral constructs what can be displayed individually according to their capacity, this ability is also used by individuals to build a diverse behaviors under pressure in the individual's life. Self-efficacy refers to the confidence of the individual to decide behavior in certain situations. It includes confidence in the ability of individuals to implement plans and strategies (Hoyle, 2010).

### **Social Support**

Shelley E. Taylor (2009) defines social support as information from the environment around that people are loved, cared, respected, and is part of a social community environment. Social support can be provided by a parent, spouse or loved one, friends, colleagues and other

relationships, as well as from a social community around the individual. Individuals who have received social support at higher levels, tend to have lower stress when faced a stressful life experience, in the end, these individuals can solve the problems that afflict them with more success. Social support is closely related to the health of individuals, one studyin revealed that the higher level of satisfaction with social support is often associated with lower symptoms of depression in individuals (Cohen, Underwood, and Gottlieb, 2000).

## METHOD

### Procedure and Sample

This study used a sample of 123 cancer patients in C-Tech Labs Edwar Technology research method accidental sampling, which provides direct questionnaire as a measuring tool to the study of cancer patients who are visiting C-Tech Labs Edwar Technology. From the results of this sampling result show that 123 cancer patients who were respondents in this study, as 78 people (63.41%) entered the mature stage of development, while 31 (25.20%) entered the final adult stage of development, then by 12 people (9.75%) is in early adult developmental stages, and by 2 (1.62%) are in the stage of adolescent development. Samples of women in this study amounted to 114 people (92.68%), while the male sample totaled 9 (7.31%). The type of cancer that dominates in the study sample is breast cancer with the number of 80 people (65.04%) followed by brain cancer with the number of 11 people (8.94%).

### Measurement

The variables in this study were measured using a scale that researchers have created with consideration of the limitations of the condition of cancer patients who will be sampled in filling out questionnaires and screening questionnaire from the agency C-Tech Labs Edwar Technology itself. Resilience scale consists of 21 items based on the dimensions of resilience that is emotion regulation, impulse control, optimism, causal analysis, empathy, and reaching out. Self-efficacy scale consists of 12 items based on the dimensions of self-efficacy itself is mastery experience, vicarious experience, social persuasion, and enhance physical status. Social support scale consists of nine items based on the dimensions of social support itself, which is tangible assistance, informational support, and emotional support. This scale is measured on a scale from 1 (never) to 4 scale (always).

## RESULT

### The construct validity test

Based on CFA analysis the result of measuring items from independents shown in Table 1.

**Tab. 1** The value of independents’s measuring item

	<b>Chi-Square</b>	<b>df</b>	<b>P-value</b>	<b>RMSEA</b>
Resilience	62.42	54	0.20182	0.036
Self-efficacy	41.94	34	0.16458	0.044
Social support	26.62	22	0.22547	0.042

From the result is known that the measuring instruments used in this study are valid for measure variables in this research.

### Hypothesis testing

Testing the hypothesis with multiple regression techniques showed that the proportion of variance explained by there silience of all the independent variables are at 38.6%, while 61.4% is influenced by other variables outside of this study. Meanwhile, the following table provides the explanation of influence of self-efficacy and social support to the resilience of cancer patients inthe C-Tech Labs Edwar Technology. These results can be seen from the significant value gained by F Test. Thus the hypothesis that there is a significant effect of all independent variables on there silience accepted. That there is a significant effect of self-efficacy and social support to the resilience of cancer patients in the C-Tech Labs Edwar Technology.

**Tab. 2** The effect of independent variables to dependent variable

**ANOVA<sup>a</sup>**

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	3519,978	8	439,997	8,956	,000 <sup>b</sup>
1 Residual	5600,504	114	49,127		
Total	9120,482	122			

a. Dependent Variable: T\_RESILIENSI

b. Predictors: (Constant), Gender, EMOTIONAL, MASTERY\_EXPERIENCE, ENHANCE\_PHYSIC, TANGIBLE\_ASSISTANCE, SOSIAL\_PERSUE, VICARIOUS\_EXPERIENCE, EMOTIONAL\_SUPPORT

Furthermore, the researchers tested a regression coefficient of each independent variable. If significance <0.05, then the regression coefficient was significant which means that there is significant influence of the independent variables on the resilience of cancer patients in the C-Tech Labs Edwar Technology. The regression coefficient of each independent variable to the resilience shown in Tab.3.

**Tab. 3** Regression Coefficient

Model	Coefficients <sup>a</sup>			t	Sig.
	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta		
(Constant)	17,138	6,434		2,663	0,009
MASTERY_EXPERIENCE	0,446	0,091	0,415	4,885	0
VICARIOUS_EXPERIENC E	0,146	0,115	0,134	1,274	0,205
1 SOSIAL_PERSUE	0,129	0,109	0,133	1,186	0,238
ENHANCE_PHYSIC	0,117	0,086	0,108	1,348	0,18
TANGIBLE_ASSISTANCE	-0,199	0,099	-0,174	-2,016	0,046
INFORMATIONAL	-0,033	0,094	-0,033	-0,355	0,723
EMOTIONAL_SUPPORT	0,049	0,113	0,047	0,432	0,667
Gender	2,234	2,511	0,068	0,889	0,376

a. Dependent Variable: T\_RESILIENSI

Based on the regression coefficients in Tab. 3, it can be seen regression equation as follows:

$$\text{Resilience} = 17,138 + 446 \text{ mastery experience}^* + 146 \text{ vicarious experience} + 129 \text{ social persuasion} + 117 \text{ enhance physical status} - 199 \text{ tangible assistance}^* - 33 \text{ informational support} + 49 \text{ emotional support} + 2,234 \text{ gender}$$

\*significant

It can be seen that only the regression coefficient mastery experience significant and tangible assistance. Then from eight minor hypothesis, there are two significant hypotheses. Researchers also analyzed the effects of eight independent variables to dependent variable. The F test can be seen in Tab.4.

**Tab. 4** Analysis of varian’s proportion

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	,550 <sup>a</sup>	0,302	0,296	7,25276	0,302	52,385	1	121	0
2	,584 <sup>b</sup>	0,341	0,598	7,07473	0,039	7,166	1	120	0,008
3	,591 <sup>c</sup>	0,349	0,606	7,0637	0,008	1,375	1	119	0,243
4	,596 <sup>d</sup>	0,355	0,612	7,05998	0,006	1,126	1	118	0,291
5	,616 <sup>e</sup>	0,38	0,637	6,95368	0,025	4,635	1	117	0,033
6	,617 <sup>f</sup>	0,38	0,638	6,97961	0,001	0,132	1	116	0,717
7	,618 <sup>g</sup>	0,382	0,639	7,00271	0,001	0,236	1	115	0,628
8	,621 <sup>h</sup>	0,386	0,643	7,00908	0,004	0,791	1	114	0,376

a. Predictors: (Constant), MASTERY\_EXPERIENCE

b. Predictors: (Constant), MASTERY\_EXPERIENCE, VICARIOUS\_EXPERIENCE

c. Predictors: (Constant), MASTERY\_EXPERIENCE, VICARIOUS\_EXPERIENCE, SOCIAL\_PERSUE

d. Predictors: (Constant), MASTERY\_EXPERIENCE, VICARIOUS\_EXPERIENCE, SOCIAL\_PERSUE, ENHANCE\_PHYSIC

e. Predictors: (Constant), MASTERY\_EXPERIENCE, VICARIOUS\_EXPERIENCE, SOCIAL\_PERSUE, ENHANCE\_PHYSIC, TANGIBLE\_ASSISTANCE

f. Predictors: (Constant), MASTERY\_EXPERIENCE, VICARIOUS\_EXPERIENCE, SOCIAL\_PERSUE, ENHANCE\_PHYSIC, TANGIBLE\_ASSISTANCE, EMOTIONAL

g. Predictors: (Constant), MASTERY\_EXPERIENCE, VICARIOUS\_EXPERIENCE, SOCIAL\_PERSUE, ENHANCE\_PHYSIC, TANGIBLE\_ASSISTANCE, EMOTIONAL, EMOTIONAL\_SUPPORT

h. Predictors: (Constant), MASTERY\_EXPERIENCE, VICARIOUS\_EXPERIENCE, SOCIAL\_PERSUE, ENHANCE\_PHYSIC, TANGIBLE\_ASSISTANCE, EMOTIONAL, EMOTIONAL\_SUPPORT, Gender

## DISCUSSION

Based on the results of hypothesis testing that has been done, the conclusions of which may be obtained from the results of this study are found a significant influence on the dimensions of the variable self-efficacy that is mastery experience, vicarious experience, social persuasion, and Enhance physical status, dimensions variable social support that is tangible assistance, informational support, and emotional support, as well as the gender of the resilience of cancer patients in the C-Tech Labs Edwar Technology with a significant contribution at 38.6%. Thus, it can be concluded that the major hypothesis which states that there is a significant effect of self-efficacy and social support for cancer patient's resilience C-Tech Labs Edwar Technology received.

After major hypothesis in this study is accepted, researcher tested minor hypothesis to determine the significance of each independent variable on the dependent variable. From the coefficient of each independent variable result that, independent variable that has a significant influence on the resilience of cancer patients in the C-Tech Labs Edwar Technology is the dimension of self-efficacy, that is mastery experience and dimensions of social support, that is tangible assistance. While independent of other variables such as vicarious experience, social persuasion, enhance physical status, informational support, emotional support, and gender do not give a significant influence on resilience. While most dominant predictor affect the resilience of cancer patients in the C-Tech Labs Edwar Technology is mastery experience.

Results shown that the level of tangible assistance as the dimation of social support to cancer patients in the C-Tech Labs Edwar Technology tends to be high with a percentage of 60.98%. This means, for 60.98% of cancer patients in the C-Tech Labs Edwar Technology has a high tendency to be able to receive assistance in the form of services, goods, and finances of other people in the vicinity. Although, the regression coefficient in this study stated that tangible assistance has a negative significant impact to resilience in patients cancer. Taylor (2007) explained that social support will not achieve optimal results when individuals who receive such support do not feel the need for such support. By receiving social support from others, people would feel guilty depend on others and monopolize the time and attention that belongs to someone else for help. In this case, optimal results may be achieved when such support is given in the form of invisible support, which is a type of support received by individuals without realizing the presence of such assistance from others.

Besides, mastery experience of self-efficacy have a significant positive influence on the resilience of cancer patients in the C-Tech Labs Edwar Technology. This means that the higher mastery experience possessed by cancer patients, the higher the level of its resilience. Rovniak (2003) in his experiments on the mastery experience reveals that the group who has mastery experience have significant differences compared to those who do not have mastery experience to improve the ability for the achievement of goal setting is designed. The higher mastery experience in cancer patients will make it have the ability to gather experiences in the past to face the difficulty of the current situation increased. Problem after problem that has successfully gone through during its life span will eventually be trained to have a high resilience. Because of the high degree of resilience that is owned by someone is also influenced by the success of the person in the completion of their task after a difficult task in life. The cancer patients in C-Tech Labs Edwar Technology tends to have a high level of mastery experience with a percentage of 53.66%. This means, for 53.66% of cancer patients in the C-Tech Labs Edwar Technology tends to use his mind to confront his illness in a high level, tend to use past experience to deal with the difficulty of the current situation, and can determine what steps will be taken to face a difficult situation at hand.

## **SUGGESTION**

Independent variables that are highly recommended for further study its effect on resiliency based on the results of previous research and the results of elicitation in C-Tech Labs Edwar Technology is religiosity, personality types, coping strategies, pain management, perception, positive cognitive triad, as well as practice and learning.

Researchers who want to do further research on resilience in cancer patients are advised to take samples with higher numbers of samples and the number of men and women are more evenly to see the gender ratio is more general. In addition, further research is recommended to see the impact of demographics is the level of education, employment status, and residence. Because based on Indonesian Health Research (2013), there is a difference in the number of cancer patients in each demographic variable, namely cancer patients were the most found in the group of educational level Graduated D1-D3 / Universities, employment status was not working and residing in urban areas. Future studies are recommended to see whether there are differences in the level of resilience of each of these groups.

Future studies are also advised to use a theoretical basis as well as developing a measuring tool of health self-efficacy in research related to the health because it is more specific theories about how individuals can adjust their behavior to achieve the goals relating to health.

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