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**The Effect Of Communicative And Critical Health Literacy On
Primary Stroke Prevention Behavior Of Patients With
Hypertension**

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Abstract:

Background: Stroke-Related Health Literacy Entails Understanding Risk Factors For Stroke Prevention Along With Recognizing Stroke Warning Signs. Health Literacy Can Be A Controllable Determinant Of Health Behavior Which Affects Stroke Prevention. This Research Aims To Analyze The Effect Of Health Literacy (Communicative And Critical Health Literacy) On Primary Stroke Prevention Behavior In Patients With Hypertension.

Methods: This Quantitative Research Employed A Cross Sectional Study Design. It Involved 217 Patients. The Sampling Technique Used In Participant Recruitment Was Accidental Sampling. The Research Was Conducted In 3 Health Centres In Makassar City. The Data Analysis Comprised Univariate Analysis, Bivariate Analysis Using The Chi-Square Test, And Multivariate Analysis Using Regresi Linear Berganda.

Result: Family Support Influenced Through Health Literacy Communication And Critical Knowledge Of Stroke With P Values Of 0.002 And 0.004, Respectively, On Stroke Attitudes With P Values Of 0, 014 And 0.024, Respectively, On Diet With P Values Of 0, 010 And Respectively, 0.003, For Physical Activity With P Values Of 0, 003 And 0.004, Respectively, For The Risk Of Stroke With P Values Of 0.003 And 0.001, Respectively. Meanwhile, Family Support Has An Effect On Smoking Habits Through Health Literacy Communicative With A P Value Of 0.010. However, Through Critical Health Literacy, It Has No Effect With A P Value Of 0.126.

Conclusion: Family Support Through Communicative And Critical Health Literacy, Have An Effect On Primary Stroke Prevention Behavior In Patients With Hypertension.

Keywords: Family Support, Communicative, Critical Health Literacy, Stroke, Health Information

A. Background

Stroke Has Been A Primary Neurological Problem In The World And The Number Of Stroke Cases Is Increasing. It Has Been One Of Major Causes Of Death And

Disability Worldwide. Stroke Has Major Emotional And Socio-Economic Impacts On Patients, Families, And Health Services (Béjot Et Al., 2017; Marshall Et Al., 2015).

Based On The Data Of Riskesdas 2018, The Prevalence Of Stroke Increased From 7% To 10.9%, And Chronic Kidney Disease Increased From 2% To 3.8%. Based On Examination Of Blood Sugar, Diabetes Mellitus Increased From 6.9% To 8.5% And The Results Of Blood Pressure Measurements Indicate That Hypertension Rose From 12.5.8% To 34.1%. The Increased Prevalence Of Non-Communicable Diseases Is Related To Unhealthy Lifestyle, Including Smoking, Consumption Of Alcoholic Beverages, Inadequate Physical Activity, And Low Consumption Of Fruits

24. Vegetables, Which Become Risky Behaviors (Ministry Of Health, 2018). Hypertension Is The Most Dominant Risk Factor For All Types Of Stroke, Occurring In 24.9-80% Of Patients, 60.62 Followed By Diabetes, 5.1-69.4% .31,41 Dyslipidemia Reported By 5.4-65, 8%, 67.72 And Smoking, 1.6-47.34%.33,41 Other Risk Factors Include Previous Transient Ischemic Attack (2.1-39%), 60.63 Heart Disease (4-50%), 10.68 Obesity (5.3-66%), 33.50 And Family History Of Stroke (5.4-31.6%). 34.73 No Risk Factors Were Reported By 7.9-27.5% Of Cases. 60.67 (El-Hajj Et Al., 2016).

The Prevalence Of Hypertension In South Sulawesi Based On The Data Of Riskesdas 2007 Was 5.7%; It Was 10.3% Based On The Data Of Riskesdas 2013, And 7.22% Based On The Data Of Riskesdas 2018. Meanwhile, Based On The Measurement Results Of Riskesdas 2007, The Prevalence Was 19.0%; It Was 28.1% Based On Riskesdas 2013, And 31.68% Based On Riskesdas 2018 (Ministry Of Health Of The Republic Of Indonesia, 2007; Ministry Of Health Of The Republic Of Indonesia, 2013; Ministry Of Health Of The Republic Of Indonesia, 2018).

The More Stroke Victims In Indonesia, Particularly In South Sulawesi Province, The More Likely The General Public Will Recognize Stroke Disease. Stroke Related Health Knowledge Involves Understanding Stroke Risk Factors And Recognizing Stroke Warning Signs.

Health Literacy Can Influence Stroke Prevention By Being A Modifiable 15 Determinant Of Health Behavior. According To Nutbeam (2000), Health Literacy Is A New Concept In Health Promotion, Which 18. A Concept Of Health Education And Behavior-Based Health Communication In Health Promotion And Disease Prevention. Health Literacy Aims Not Only To Change Lifestyle But Also To Achieve Awareness Of Health Effects And Encourage Individuals And Society To Take Action In Overcoming Health Problems Because Health Literacy Is The Basis 10. Good Health Knowledge Which Greatly Influences Healthy Behavior.

The Objective Of This Research Was To Analyze The Effect Of Health Literacy (Communicative And Critical Health Literacy) On Primary Stroke Prevention Behavior Among Patients With Hypertension.

B. Research Methods

1. Type Of Research

A Cross-Sectional Study Design Was Used For This Quantitative Research.

It Investigated The Relationship Between Personal Variables, Community Variables, Social And Environmental Variables, Health Information Access Variables, And Health Literacy Level. Then, It Analyzed The Relationship Between Health Literacy And Primary Stroke Prevention Behavior.

2. Large Samples And Technical Samples

3. The Samples Included 217 Respondents Who Were Obtained Based On The Calculation Of The Infinite Lemeshow Sample Formula. The Sampling Technique

Used Was Accidental Sampling

4. Research Location

The Study Was Carried Out In Three Health Centers In Makassar, Those With The

Highest Rates Of Hypertension, Namely The Kassi - Kassi Health Center In NonCoastal Areas And The Tabaringan And Pattingalong Health Center In Coastal Areas.

5. Data Collection For Variable Instruments, It Has References, Namely:
 - a. Measuring The Level Of Health Literacy Using The Flcc Questionnaire
 - b. Dietary Variables Were Measured Using The Food Frequency Questionnaire.
 - c. Physical Activity Variables Were Measured Using The Ipaq Questionnaire
 - d. The Variable Of Smoking Habits Was Measured Using The Riskesdas 2018 Questionnaire
 - a. Other Variables Were Compiled Independently And Tested For Validity And Reliability
6. Data Analysis
The Data Analysis Employed Univariate And Bivariate Analysis Using The ChiSquare Test, And Multivariate Analysis Using Binary Logistic. Spss Version 22 Was Employed In The Analysis.

C. Research Results 1. Characteristics Of Respondents

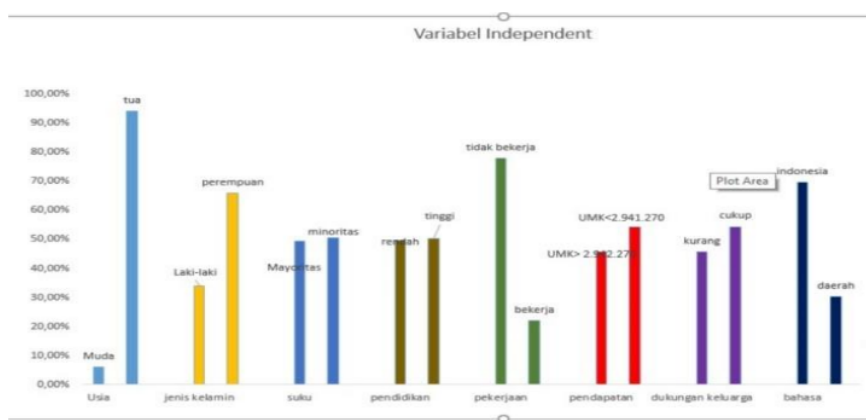


Figure 1 Shows The Determinant Variable Of Health Literacy. According To Sorenson, 2012 The Concept Of Health Literacy Is Very Broad And Is Influenced By Several Determinants, Namely Age, Gender, Ethnicity, Education, Occupation, Income, Family Support, Language And Access To Health Information. These Are Also Influenced By Health Literacy As Characteristics Of Respondents.

The Results Of Univariate Analysis Of Several Determinant Variables Of Health Literacy, Family Support In The Poor Category Were Less (45.6%) Compared To The Category Of Family Support Is Moderate (54.4%). Likewise, The Access To Health Information In The Poor Category Was Low (47.9%) Compared To The High Category Is Sufficient (52.1%). In This Study, Most Of The Respondents Did Not Work Because Of Retirees And They Are Housewives.

2. Univariate Analysis

A. Health Literacy Level (Functional, Communicative, And Critical)

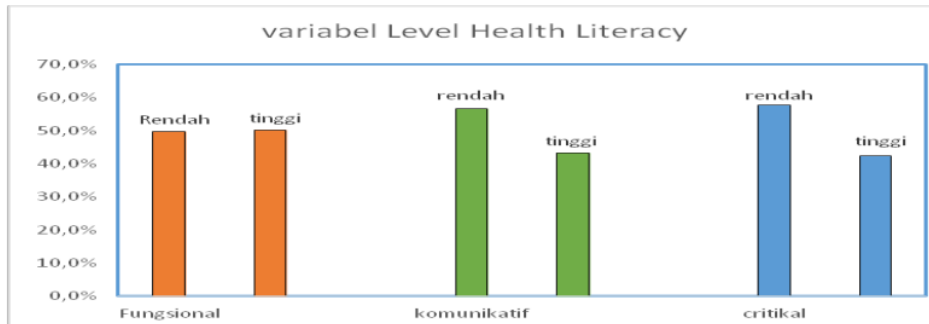


Figure 2 Describes The Category Of Health Literacy. Nutbeam (2015) Classified Health Literacy Into 3 Categories, Namely Functional, Communicative And Critical. Which Presents The Univariate Analysis Describing The Communicative And Critical Health Literacy Categories, Has A High Presentation With A Low Category Compared To The High Category. This Means That Respondents Are Low In Interpreting, Criticizing And Applying The Health Information Obtained.

b. Behavior Variables Of Primary Stroke Prevention And Stroke Risk



Figure 3 Shows The Variables Of Primary Stroke Prevention Behaviour And Stroke Risk Factors. Health Literacy Will Affect The Health Behaviour, In This Study The Primary Stroke Prevention Behaviour. The Primary Stroke Prevention Behaviour Includes Knowledge, Attitudes, Diet, Physical Activity, Smoking Behaviour. And To Increase Respondents' Awareness About Stroke, It Is Necessary To Know The Risk Of Stroke In People With Hypertension.

The Result Of Univariate Analysis, Respondents' Knowledge About Stroke In The Low Category Was High (57.1%) Compared To The Moderate Category Is Low (42.9%). Lack Of Knowledge Will Affect Attitudes And Actions. This Is In Accordance With The Research That The Attitude Variable In The Low Category

Is Higher Than The Medium Category With A Very Significant Variable For Stroke, Namely Diet, Eating Patterns With Risk Categories Has A Higher Presentation (41.5%) Than The Non-Risk Category (58.5%). The Percentage Of Smoking Behaviour Is Lower Than Non-Smokers. This Is Because The Respondents Are More Women Than Men.

3. Bivariate Analysis

14 A. The Relationship Between Health Literacy Determinants And The Level Of Health Literacy (Functional Health Literacy, Communicative Health Literacy, And Critical Health Literacy) In Patients With Hypertension. 3

Variabel	Health Literacy Komunikatif P	Health Literacy Critical P
Age	0,514	1,00
Sex	0,676	0,538
Ethnic	0,556	0,755
Education	0,196	0,008
Occupation	0,290	0,297
Income	0,866	0,884
Family Support	0,010	0,002
Languange	0,786	0,877
Acces Information	0,000	0,000

Table 1 Describes The Analysis Of The Relationship Between The Determinants Of Health Literacy And The Level Of Health Literacy (Functional Health Literacy, Communicative Health Literacy, Critical Health Literacy) In Patients With Hypertension. Respondents In Implementing Health Literacy Criteria Are Very Much Determined By The Criteria Or Determinants Of Health Literacy.

The Results Of The Bivariate Analysis Show That The Variables Gender, Education, Occupation And Income Are Related To Functional Health Literacy Because The P-Value Is <0.05 , While The Variables Age, Ethnicity, Family Support, Language And Access To Health Information Are Not Related Because The Value Of $P > 0,05$. Variables Family Support And Access To Health Information Are 2 Variables That Are Related To Communicative And Critical Health Literacy Because Of The Value Of $P < 0.05$, While Other Variables Are Not Related Because The Value Is $P > 0.05$.

B. The Relationship Between Determinant Variables Of Health Literacy And Primary Stroke Prevention Behaviour And Stroke Risk In Patients With Hypertension.

Variabel	Knowledge P	Attitudes P	Diet P	Physical Activity P	Smoking Habits P	Stroke Risk P
Age	0,536	0,558	0,752	0,553	1,000	0,146
Sex	0,725	0,971	0,380	0,238	0,000	0,161
Ethnic	0,122	0,557	0,849	0,817	1,000	0,096

Education	0,248	0,117	0,543	0,496	0,188	0,602
Occupation	0,981	0,778	0,704	0,136	0,002	0,182
Income	0,595	0,212	0,138	0,127	0,531	0,026
Family Support	0,006	0,004	0,001	0,006	0,021	0,048
Language	0,594	0,650	0,718	0,136	0,440	

Table 2 The Relationship Between Determinant Variables Of Health Literacy And Primary Stroke Prevention Behaviour And Stroke Risk In Patients With Hypertension. Its Describes The Analysis Of The Relationship Between Health Literacy Determinant Variables And Stroke Prevention Behavior And Stroke Risk In Hypertension Sufferers. Primary Prevention Behavior Is Largely Determined By Respondents And Determinants Of Health Literacy.

Based On The Results Of The Bivariate Analysis, It Shows That Family Support And Access To Health Information Are Related To Knowledge, Attitudes, Diet And Physical Activity With A Value Of $P < 0.05$, While The Variables Age, Gender, Ethnicity, Education, Occupation, Income And Language Are Not Significant Because $P \text{ Value} > 0.05$. For Smoking Behavior Variables, The Determinants Of Health Literacy, Gender, Occupation And Family Support Were Significant For Smoking Behavior From The Result Show The $P \text{ Value} < 0.05$, Meanwhile, The Variables Of Age, Ethnicity, Education, Income, Language And Access To Health Information Were Not Related Because The $P\text{-Value} > 0.05$.

b. The Relationship Between Health Literacy Level And Primary Stroke Prevention Behavior And Stroke Risk In Hypertension Patients

Variabel	Educatio n	Attitu de	Diet	Physic al Activit y	Smokin g Behavi our	Strok e Risk
	<i>P</i>	<i>P</i>	<i>P</i>	<i>P</i>	<i>P</i>	<i>P</i>
Health Literacy Communicative	0,006	0,238	0,889	0,008	0,127	0,001
Health Literacy Critical	0,001	0,66	0,770	0,004	0,260	0,000

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Table 3 Describes The Analysis Of The Relationship Between Health Literacy Level And Primary Stroke Prevention Behavior And Stroke Risk In Hypertension Sufferers. This Is Very Important To Analyze Because Disease Prevention Behavior Is Very Much Influenced By The Health Literacy Level Of Hypertension Sufferers. The Importance Of Sufferers In Accessing, Understanding And Applying Health Information Obtained To Increase Awareness In Primary Stroke Prevention.

The Results Of The Bivariate Analysis, It Shows That Communicative And Critical Health Literacy Is Significant With Knowledge, Physical Activity And Stroke

Risk Because The P-Value Is <0.05 , While Functional Health Literacy Is Not Significant Because The P Value Is >0.05 . None Of The Functional, Communicative And Critical Health Literacy Variables Was Significant With The Attitude Diet And Smoking Behavior. This Was Because Each Variable Had A P Value >0.05 .

The Results Of The Analysis Of The Relationship Between Table 3 On The Knowledge Variable Show That There Is A Correlation Between Communicative Health Literacy And Stroke Knowledge With A P-Value Of $0.006 <0.005$. There Is A Relationship Between Health Literacy Critical And Knowledge With A P-Value Of $0.001 <0.005$.

4. Multivariate Analysis

According To The Findings Of The Bivariate Analysis, Family Support And Access To Health Information Were Related To Communicative And Critical Health Literacy. First-Line Stroke Prevention Behavior (Knowledge, Attitudes, Diet, Physical Activity, And Smoking Habits).

A. Family Support a. Family Support – Health Literacy – Pengetahuan

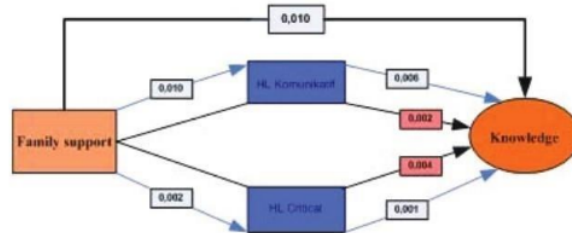


Figure 1. The Effect Of Family Support Through Communication Health Literacy And Critical Health Literacy On Physical Activity.

The Results Of Data Analysis In Figure 1 Show That Family Support Has An Effect Through Communicative Health Literacy On Physical Activity With A P Value Of $0.003 <0.05$ And Access To Health Information Has An Effect Through Critical Health Literacy On Physical Activity With A P Value Of $0.004 <0.05$.

b. Family Support - Health Literacy - Smoking Habits

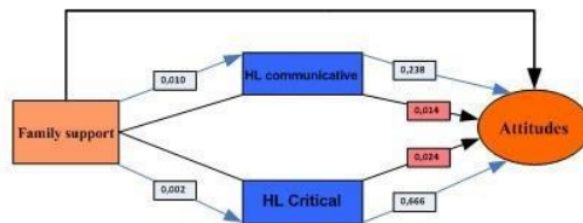


Figure 2. Effects Of Family Support Through Communication Health Literacy And Critical Health Literacy On Smoking Habits

The Results Of The Analysis Of Figure 2 Show That Family Support Has An Effect Through Communicative Health Literacy On Smoking Habits With A Value Of $P < 0.010 < 0.05$ And Has No Effect Through Health Literacy Critical To Smoking Habits With A P Value Of $0.126 > 0.05$.

D. Discussion

Based On The Results Of The Study, Can Be Said To Be Balanced Compared To Communicative And Physical Health Literacy With Lower Categories, Greater Than The High Category. This Means That The Basic Health Literacy Skills Possessed By Each Individual Is Quite Good But The Communicative And Critical Health Literacy Is Still Low. This Means That The Respondents' Awareness In Interpreting Various Forms Of Communication (In Personal, Mass Media) Is Still Low, As Well As In Applying New Information Obtained To Change The Situation. The Respondents Only Get Information That Stops There, The Ability To Communicate And Apply The Information Obtained Is Low. However, Respondents Were Still Low In Describing More Advanced Cognitive Skills Which, Along With Social Skills, Could Be Applied To Critically Criticize Information. Respondents Are Still Not Critical Of The Information Obtained.

The Results Of The Study (Heijmans Et Al., 2015a) Suggest That Functional, Communicative And Critical Health Literacy Each Has A Unique Impact On Self-Management (Ability For) Self-Management, Although In General Communicative And Critical Health Literacy Are Stronger Predictors Or Better Self-Management Than Functional Health Literacy. Thus It Can Be Said That Functional Health Literacy Is Less Important In The Relationship Of Self-Management. Meanwhile, Research (Medyati Et Al., 2023) Found That The High Proportion Of Literacy In Cooking Workers Was High. Functional, Communicative, And Critical Health Literacy Have Their Own Abilities For Self-Management, Although In General Communicative And Critical Health Literacy Are Stronger Predictors Of Self-Management Than Functional Health Literacy. Family Support Is Related To Communicative And Critical Health Literacy. This Is Because It Requires Family Support In Interpreting Various Forms Of Communication (Personal, Mass Media), As Well As Awareness In Applying New Information Obtained To Change The Situation. Family Support Is Also Considered Important In Helping Hypertensive Patients Criticize The Information Obtained In The Application.

This Research Is Not In Line With Research By Patandung (2018) Which States That Social Support Is Not Related To Communicative And Critical Health Literacy. Meanwhile, Research (Li Et Al., 2020) Is In Line With This Study Which States That There Is Significant Social Support With Health Literacy. Research (Heijmans Et Al., 2015b) States That Communicative And Critical Health Literacy Is A Stronger Predictor Than Literacy Functional Health. This Research Is Reinforced By Research (Siopis Et Al., 2021) That Health Literacy Increases Because It Is Related To Social Support From Family And Friends.

According To (Watkins And Xie, 2014), Health Literacy Is "The Extent To Which Individuals (Can) Obtain, Process, And Understand Basic Health Information And Services Needed To Make Informed Health Decisions. According To Nutbeam (2000), Health Literacy Is The Result Of The Concept Of Health Education And Health Communication Through A Behavioural Approach That Aims To Modify Lifestyles And Achieve Awareness Of Both Individuals And Society In Acting To Overcome Health Problems.

Health Literacy Communicative And Critical HI Are Significant With

Knowledge And Physical Activity. This Means That There Is A High Proportion Of Respondents In The Low HI Category Compared To The High Category. Respondents' Ability Is Still Low In Collecting, Selecting, Understanding, Considering, And Examining Information Obtained In Decision Making For Primary Stroke Prevention.

Research (V. Olisarova, 2021) States That Decreased Health Literacy And Cognition Are Independently Associated With Decreased Knowledge. This Study Is In Line With (Juil Et Al., 2018) Who Carried Out A Study In Denmark Which Aimed To Investigate The Relationship Between Health Literacy (HI) And Diet And Physical Activity, And Motivation And Diet And Physical Activity In Danish People With Type 2 Diabetes. They Obtained Results That Communicative And Critical HI With Physical Activity.

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