

Effect on Health Promotion Behavior Patterns in Healthy Employees

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ABSTRACT

Excess body weight (overweight / obesity) is one that is considered as a serious health problem in Indonesia because it can cause a high risk disease. Health is closely related to human behavior. XYZ is a company which number of employees with is relatively high overweight cases. Preventions and improvements have been made, including health promotion through these four methods: poster publications, health seminars, health competitions and counseling by experts. This study was aimed to analyze the effect of health promotion on healthy lifestyle with changes in the behavior of workers in XYZ. Forms of research will be orientated of the present and the past. Results of the evaluation are credited from results of the existing and past programs. The evaluation is not associated with results to be obtained in the future. Retrospective evaluation stressed on the results related to the actions that have been taken (ex-post). Recommendations came from the evaluation of candidates and made before the action being performed (ex-ante) with a sample of 50% of the total population of 284 workers. Comparative analysis between the before and after of secondary data of the promotion program is analyzed using the t test and later continued with tests of content validity, requirement validity, and prediction validity that simultaneously building validity. Next is test of the top two boxes to combine the percentage of respondents who chose two scales answers and the top two categories of Rating Scale. The latter is analyzed using Confirmatory Factor Analysis section of SEM to identify the relationship between variables testing the correlation and determine the effect of health promotion workers to XYZ employees behavior changes.

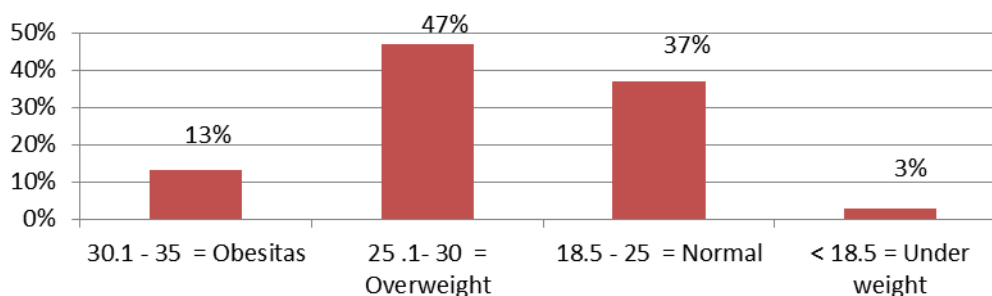
From these results, it appear that the factors affecting health is highest seen in the health service factor. In descriptive distribution of respondents' answers to the questions in the questionnaire based on the characteristic table of Health Services, the statement that the willingness of doctors to provide medical explanation were sufficient to support the implementation of a healthy lifestyle and also had an average of 4.182 and 93%. Health promotion strategies using media appear to be the most influential counseling media for respondents. The statement that it is easy to understand and remember the message that support media counseling with an average of 4.364 and 96%.

Keywords: health factors, health promotion, communication

PRELIMINARY

Health is an investment to support the company's development as well as having an important role in improving the productivity of labor. According to Blum (1937)), quoted by Notoatmodjo (2007), there are four factors that together affect the level of public health, namely: Environmental Health, Behavior, Health Services and Genetics. Health development should be seen as an investment to improve the quality of human resources. In the measurement of Human Development Index (HDI), health is one of the major components in addition to education and income. In Act No. 23 of 1992 on Health determined that health is a state of being of body, soul and social to enable more people to live socially and economically productive.

Government regulation of health must be implemented in every industry in Indonesia. One industry that has been running this health regulations which XYZ (XYZ). XYZ issued a policy on health and treatment as outlined in the company regulations in Chapter XIII of Article 46 point 2 of the examination of health, prevention and treatment. The goal is to maintain the health of workers XYZ. One form of health prevention ie with regular health checks or medical check up to all workers every year. The results of periodic health examinations were conducted to employees XYZ found numerical Fit and Unfit. Unfit value includes findings - findings with indicators of overweight workers. Figure 1 shows the weight of data contained on four categories in XYZ in January 2014.



Source : Data of XYZ 2014

Figure 1. XYZ employees Body Mass Index

Reality in Figure 1, is a health problem that must find a way out, because being overweight is one of the factors that affect health because it can increase the chances of various diseases until the disease with a high risk, namely, heart disease, diabetes, cancer and others, Being overweight will also decrease the performance or productivity of workers. Being overweight is a result of unhealthy behavior. Healthy behavior is essentially human basis for prevention of various diseases. For these reasons XYZ create a health promotion program in maintaining the health of its workers and will examine the factors - factors that affect overweight have a negative impact on workers' health. This promotion is provided by the company as an education in maintaining a healthy lifestyle among workers. Promotion program in order to achieve the target, the implementation of promotional programs to be effective and is supported by a program that is beneficial and in accordance with the needs of companies and workers. This promotional program consists of four methods, among others: 1). Media flash (poster) through a web of companies, 2). Health seminars by specialists, 3). Health Competition 'weight loss competition' 4). Health counseling. From the results of this program will be known which of course are considered influential to healthy behavior change XYZ workers. Forms of research that will be taken is the orientation of the present and the past. Evaluation results are now directed at existing and past results. Evaluation is not related to the results obtained in the future. Retrospective evaluation, and relates to the actions that have been taken (ex-post). Recommendations resulting from a prospective evaluation and were made before the action is performed (ex-ante).

XYZ is an oil and gas company that is applying excellence in health, safety and the environment, uphold good corporate governance, and contribute to community development. XYZ also fully aware that health is a major factor in supporting the achievement of the performance. XYZ's commitment in terms of health is clearly reflected by the establishment of a medical organization consisting of physicians and experienced experts in the field, which is directly responsible to monitor the health of workers and their families, both at headquarters, or in the field. The health program created by the company include promotion program, a program of preventive and curative programs. Promotion is particularly important as workers are expected to understand a prevention against certain diseases. This form of promotion wide - wide and always different every year. Health promotion in 2014, namely 'manage your bmi' this topic was made due to an increase in the numbers of overweight (BMI > 30) and obesity (BMI > 35) employees XYZ based on the results of the examination of workers on a regular basis. Health promotion methods used are four different types, infomarsi via web mail, health seminars, competitions health and counseling.

Through health promotion is expected that no more workers XYZ overweight. Promotion of good health include a comprehensive analysis of the factors seen workers' health from environmental factors office and home environment to face the health changes that may occur. Media Promotion can also help companies in creating a healthy and productive workers.

Based on the background and the problems that have been formulated, the study aims to:

1. Analyzing factors that affect the health of XYZ employees
2. Analyze the effects of health promotion to healthy behavior change in XYZ employees
3. Formulate a communication strategy in the health promotion program

In order not to cause confusion in the achievement of the purposes of research, this research is also limited to a discussion of the factors that affect the health and the promotion of media influence on behavior change.

RESEARCH METHODS

Data used in this study are primary data and secondary data related to the research topic. The primary data obtained through interviews structured questionnaires directly to related parties. While the secondary data obtained through different sources of literature, such as books, journals and reports issued by the company as well as several Internet literature associated with this research.

The analytical method used in this research is descriptive qualitative case study approach, and quantitative methods through t Test Test Content Validity proceed with the test, criterion validity, concurrent predictive validity, Establish Validity. and the next test is the top two boxes that will combine the percentage of respondents who choose the answer two top scale, two categories of Scale. Rating This method is expected to facilitate researchers to obtain a factual, systematic, comprehensive, and accurate information on the facts and characteristics of the research object. Approach the survey conducted by the submission of a list of statements in the form of a questionnaire on the respondents. Having obtained an alternative strategy, then the next step is the selection of priority health promotion strategy with Confirmatory Factor Analysis to determine the distribution assumption of multivariate normal. Prioritas promotion strategy obtained by SEM analysis will be translated into a managerial strategy which will guide health promotion programs Health division XYZ. Model equations factors - factors that affect health in this study was formulated as follows:

Validity test was done by correlating the score of each item with the total score. The correlation technique used is the Pearson Product Moment, where the instrument is said to be valid if the correlation (r) is greater than (r) table. The formula of Pearson Product Moment:

$$r_{xy} = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{[\sum X^2 - (\sum X)^2][\sum Y^2 - (\sum Y)^2]}}$$

Symbols:

- r_{xy} = Correlation of *Product Moment*
- N = Number of samples
- $\sum X$ = Sum of button scores (X)
- $\sum Y$ = Sum of variable scores (Y)
- $\sum X^2$ = Sum of button scores square (X)
- $\sum Y^2$ = Sum of variabel scores square (X)

Top Two Boxes Analysis

Top Two Boxes Analysis is a method that combines the percentage of respondents in a Likert scale. Analysis of the Top Two Boxes are used to determine how the ratio between the number of bottom option (a score of 1, 2) that is scale strongly disagree and disagree with the top option (a score of 4, 5) or FTI, the scale of agree and strongly agree.

$$TTB = \sum \frac{f_{Ti}}{\text{total responden}} \times 100\%$$

Structural equation model (SEM) Analysis

Data analysis techniques used to discuss the problem in this research is Structural Equation Model (SEM). Structural Equation Model 63 or Structural Equation Model (SEM) is a statistical techniques that allow testing of a relatively complex set of relationships simultaneously

On First Order Confirmatory Factor Analysis of a latent variable is measured by several indicators yang dapat measured directly.

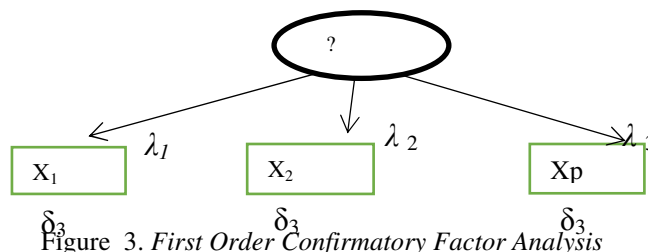


Figure 3. First Order Confirmatory Factor Analysis

Variable X is the standard deviation of each averaged, so the covariance matrix X is the expected value of the XX' . Covariance matrix X is written as a function of θ and represented it as $\Sigma(\theta)$

$$\begin{aligned} \Sigma(\theta) &= E(XX') \\ &= E[(\Lambda_x \xi + \delta)(\xi \Lambda_x + \delta)] \\ &= \Lambda_x E(\xi \xi) \Lambda_x + \Theta_\delta \end{aligned}$$

$$= \Lambda_x \Phi \Lambda_x + \Theta_\delta$$

Covariant of X matrix for general factor analysis, where :

Φ is the covariant latent matrix factor

Θ_δ is the covariant error matrix factor

Second Order Confirmatory Factor Analysis An issue allows for the latent variables can not be measured directly through the indicator variables. The latent variables have some indicators where the indicators can not be measured directly, and requires several indicators again. In this case the First Order Confirmatory Factor Analysis can not be used, so that the use of higher order (second order Confirmatory Factor Analysis).

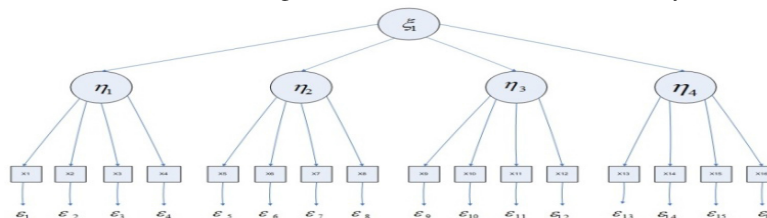


Figure 4. Second Order Confirmatory Factor Analysis Model

The equation model can be written as such:

$$\eta = \Gamma \xi + \zeta$$

where :

Γ is the second order loading matrix

ξ is the random latent vektor variabel

ζ is the single (unique) vektor variabel for η

Assumptions of Confirmatory Factor Analysis (CFA).

Estimation parameters in Confirmatory Factor Analysis (CFA) is generally based on the method of maximum likelihood (ML) ML. This method requires the assumption Multivariate Normal Distribution.

Hypotheses used as follows:

H0: the distribution of the data follow multinormal

H1: the data does not follow the distribution multinormal

Data distributions follow multinormal if it fails to reject H0, means the area under the curve of χ^2 (0.05 p). Multivariate more than 50%

Evaluation Model

The first step in interpreting the resulting models is to assess whether the model is feasible or not. There is no one single measure to assess the feasibility of a model. Here is some measure of the suitability of the model that is often used to assess the feasibility of a model.

1. χ^2 Model test is good if χ^2 test is not real to some extent. Chi-square value will only be valid if the assumption of normality is met as follows:

H0: $\Sigma = \Sigma(\theta)$, variance covariance matrix equal to the population variance covariance matrix estimates.

H1: $\Sigma \neq \Sigma(\theta)$, variance covariance matrix is not equal to the population variance covariance matrix is expected diestimasi. Hasil is H0 on condition table χ^2 value P value > α where α is equal to 0:05

2. GFI (Good Of Fit Index).

Conformance test or chi-square test of goodness of fit is the method used to determine whether the data have been obtained to support a hypothesis has met predetermined distribution or not. This method was developed by Pearson in 1900 that is also called Test Pearson. Therefore formula used is: $\chi^2 = \Sigma (O-E) / E$

Symbols used are:

χ^2 = Chi Square

O = Number of corresponding data obtained

E = Number corresponding desired distribution

3. AGFI (Adjusted Goodness of Fit Index)

A model is said to be good if AGFI its value is greater than 0.08 and the maximum value is 1.

Framework

The process of formulating the influence of health promotion in the XYZ is motivated by health data XYZ workers are currently experiencing quite high BMI values. Furthermore, the data that changes in body weight BMI calculate delta early stage before the health promotion program and the final stage after the health promotion program. This data is the supporting data in making the formulation of the problem in writing this paper. Factors - factors that affect the health of the workers will be analyzed for the next media campaign Which changes that could affect employee behavior with good analyst XYZ will be monitored through the company's data and questionnaire data. Framework of this study are listed in Figure 2.

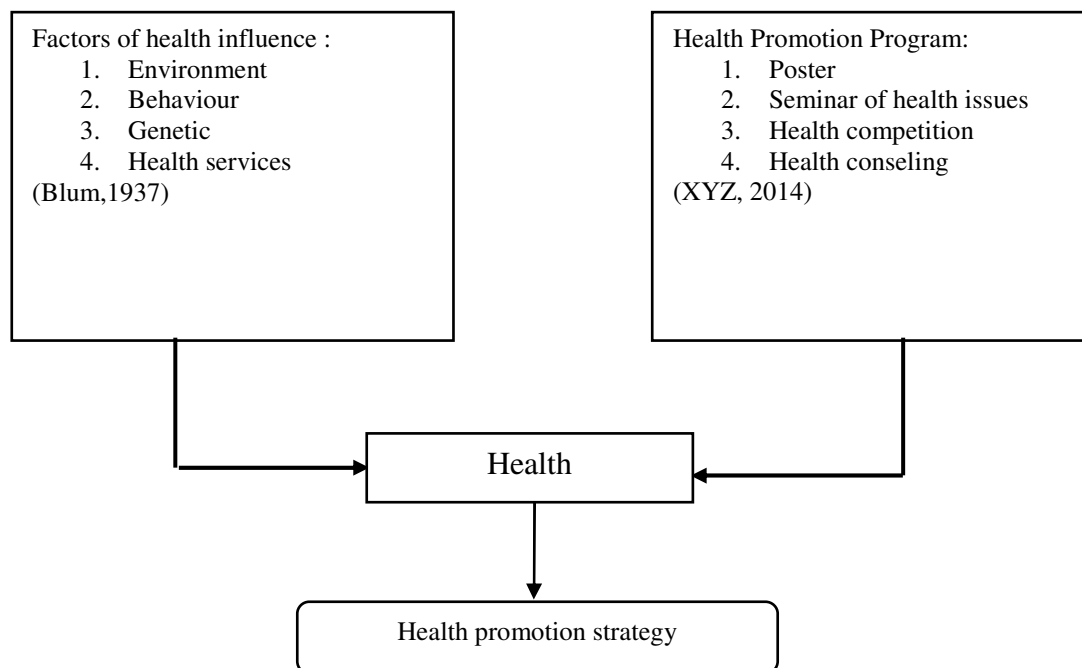


Figure 5. This research conceptual framework

RESULT AND DISCUSSION

The results of data processing reliability on the validity of the variables in measuring factors - factors that affect the health of otherwise valid. Furthermore Distribution Descriptive Answers Respondents Against question in Questionnaire factors - factors that affect health, through the calculation method of the Top Two Boxes to find out how the ratio between the number of bottom on each - each variable in each revelation can be seen in Table 1.

Table 1.Data descriptive factors - factors that affect health.

Variabel	Statement	Persen (%)					TOP TWO BOXES	Avarage
		STS	TS	KS	S	SS		
Office Environment	Q1	0%	1%	9%	65%	25%	90%	4,147
	Q2	0%	4%	6%	70%	20%	90%	4,063
	Q3	0%	1%	16%	62%	21%	83%	4,042
	Q4	0%	1%	18%	52%	30%	82%	4,112
	Q5	0%	0%	15%	51%	34%	85%	4,189
Home Environment	Q1	0%	0%	1%	63%	36%	99%	4,350
	Q2	0%	0%	1%	72%	27%	99%	4,273
	Q3	0%	8%	51%	31%	10%	41%	3,441
	Q4	0%	20%	30%	37%	12%	49%	3,420
	Q5	1%	2%	8%	56%	33%	89%	4,189
Behavior factors	Q1	0%	0%	1%	35%	65%	99%	4,643
	Q2	0%	0%	3%	42%	55%	97%	4,524
	Q3	0%	0%	11%	53%	37%	89%	4,266
	Q4	0%	5%	31%	44%	20%	64%	3,804
	Q5	1%	6%	9%	62%	22%	84%	3,986
Health Services	Q1	0%	0%	7%	68%	25%	93%	4,182
	Q2	0%	3%	15%	68%	15%	82%	3,951
	Q3	0%	0%	9%	66%	25%	91%	4,161
	Q4	0%	0%	15%	67%	18%	85%	4,028
	Q5	0%	0%	21%	55%	24%	79%	4,035
	Q6	0%	0%	20%	58%	21%	80%	4,014
	Q7	0%	3%	15%	63%	19%	82%	3,993
	Q8	0%	4%	12%	65%	19%	85%	4,007
	Q9	0%	0%	10%	59%	31%	90%	4,217
	Q10	0%	0%	10%	63%	27%	90%	4,182

Based on Table 1, that the statement of the office environment, home environment, behavioral factors and health services can support the implementation of a good job. Of variables - variables, variables with the highest level of agreement on a statement of health services and the lowest level of agreement on behavioral factors.

Distribution of Respondents Against Descriptive Answers Questions on Questionnaire Media Promotion through the calculation method of the Top Two Boxes to find out how the ratio between the number of bottom can be seen in Table 2.

Table 2. Descriptive questionnaire data of Health Promotion

Variabel X	Statement	Persen (%)					TOP TWO BOXES	Average
		STS	TS	KS	S	SS		
Media Poster	Q1	8%	19%	28%	39%	5%	44%	3,147
	Q2	0%	2%	34%	56%	8%	64%	3,706
	Q3	1%	0%	23%	69%	7%	76%	3,825
	Q4	0%	4%	23%	56%	18%	74%	3,895
	Q5	0%	4%	34%	44%	18%	63%	3,783
Seminar of health issues	Q1	0%	0%	2%	68%	30%	98%	4,287
	Q2	0%	0%	11%	63%	25%	89%	4,147
	Q3	0%	0%	23%	58%	20%	77%	3,979
	Q4	0%	3%	20%	58%	20%	77%	3,951
	Q5	0%	3%	13%	61%	24%	85%	4,063
Health Competition	Q1	0%	0%	6%	76%	18%	94%	4,133
	Q2	0%	0%	6%	74%	20%	94%	4,154
	Q3	0%	0%	23%	56%	20%	77%	3,979
	Q4	0%	0%	21%	56%	23%	79%	4,028
	Q5	0%	1%	19%	61%	20%	80%	4,000
Conseling	Q1	0%	0%	4%	75%	21%	96%	4,182
	Q2	0%	0%	6%	68%	26%	94%	4,210
	Q3	0%	0%	11%	62%	27%	89%	4,161
	Q4	0%	0%	5%	65%	30%	95%	4,259
	Q5	0%	0%	4%	56%	40%	96%	4,364

Based on Table 2 that the posters, media seminars, health and counseling competencies can support the implementation of a good job. Of variables - variables, variables with the highest level of agreement on a statement of health counseling and consent to the lowest level on media poster.

Data variable factors - factors that affect the health of the questionnaire obtained further in though using SEM, which aims to see the results of the model can match criteria; see in Table 3.

Table 3. Results of the conformance criteria SEM models factors - factors that affect health

Goodness-of-Fit	Cutt-off-Value	Result	Remarks
RMR(Root Mean Square Residual)	$\leq 0,05$ atau $\leq 0,1$	0.088	Good Fit
RMSEA(Root Mean square Error of Approximation)	$\leq 0,08$	0.061	Good Fit
GFI(Goodness of Fit)	$\geq 0,90$	0.91	Good Fit
AGFI(Adjusted Goodness of Fit Index)	$\geq 0,90$	0.90	Good Fit
CFI (Comparative Fit Index)	$\geq 0,90$	1.00	Good Fit
Normed Fit Index (NFI)	$\geq 0,90$	1.00	Good Fit
Non-Normed Fit Index (NNFI)	$\geq 0,90$	1.00	Good Fit
Incremental Fit Index (IFI)	$\geq 0,90$	1.00	Good Fit
Relative Fit Index (RFI)	$\geq 0,90$	1.00	Good Fit

Based on Tabel 3, some part of all indicators show that SEM mode is Fit enough. Questioneer data also helps answering the constructive theory.

Having obtained good results, data factors that affect the health is further processed with SEM methods, the importance of the questionnaire answers diagram in Figure 4.

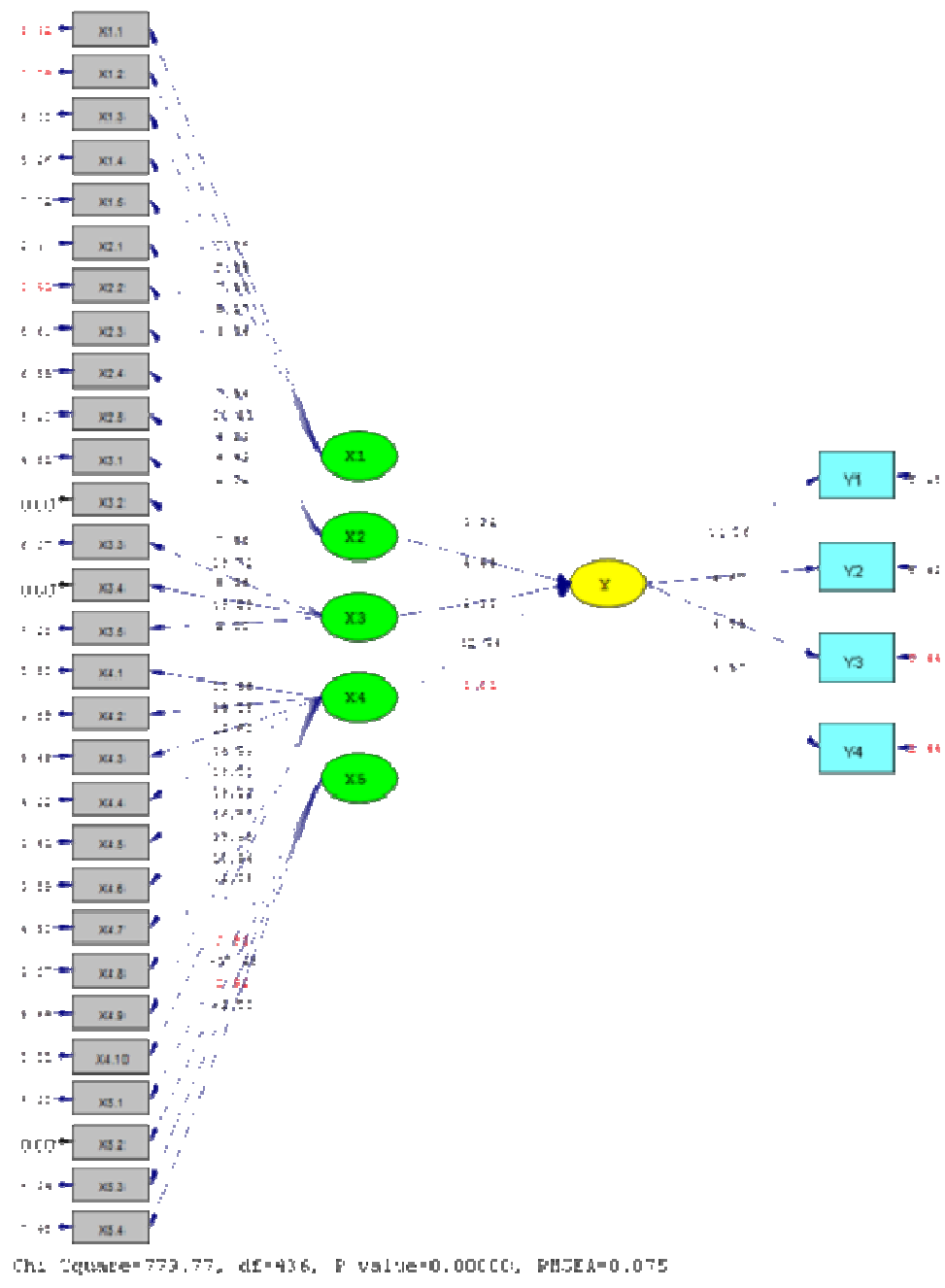
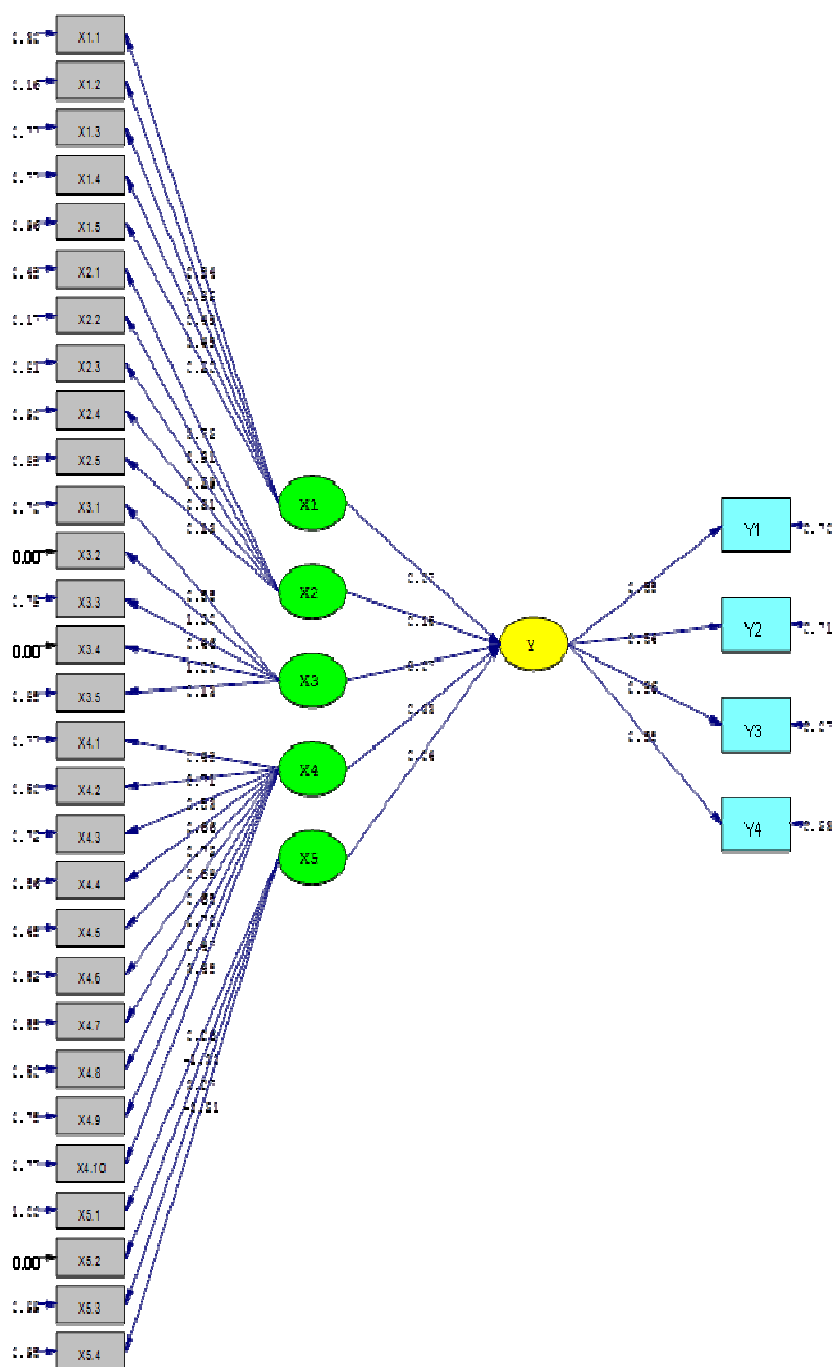


Figure 6. Counting T score of factors affecting health



Chi-Square=779.77, df=436, P-value=0.00000, RMSEA=0.075

Figure 7. Standardized Loading Factors affecting health

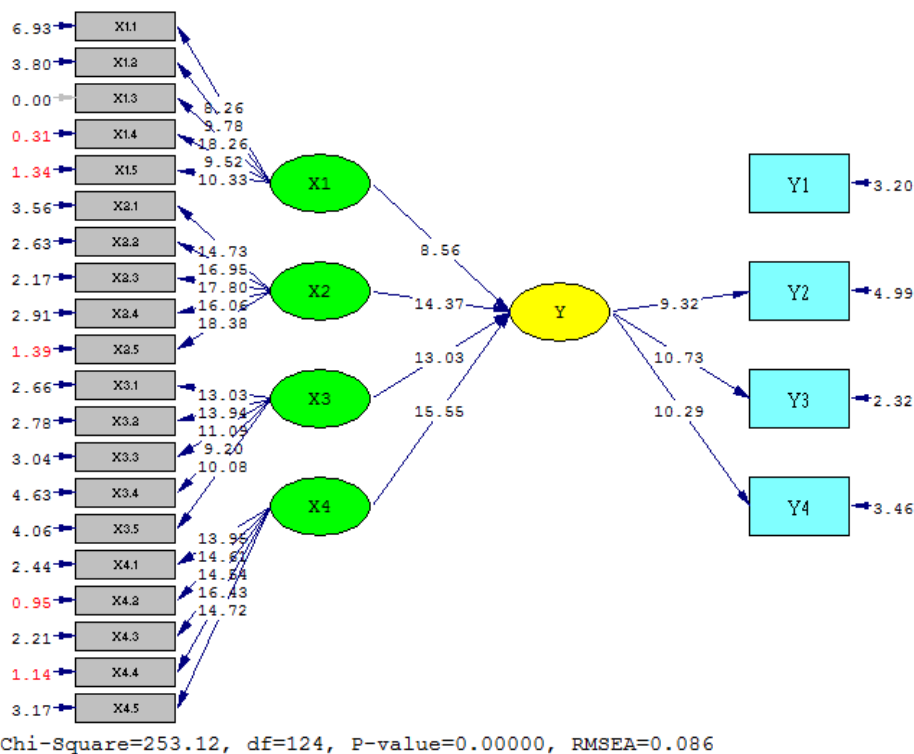
Based on the results in Figure 7, the contribution of the influence of the office environment, home environment, behavioral factors and health services have value t is greater than t table, meaning that environmental factors office, home environment, behavioral factors and health services was significantly to the health factor. Variable data of media campaigns influencing the change of behavior obtained from the questionnaire later on if using SEM, which aims to see the results of the model match criteria in Table 4.

Table 4. Results of the conformance criteria SEM models on the influence of Health Promotion

Goodness-of-Fit	Cutt-off-Value	Result	Remarks
RMR(Root Mean Square Residual)	$\leq 0,05$ atau $\leq 0,1$	0.077	Good Fit
RMSEA(Root Mean square Error of Approximation)	$\leq 0,08$	0.086	Marjinal Fit
GFI(Goodness of Fit)	$\geq 0,90$	0.97	Good Fit
AGFI(Adjusted Goodness of Fit Index)	$\geq 0,90$	0.93	Good Fit
CFI (Comparative Fit Index)	$\geq 0,90$	1.00	Good Fit
Normed Fit Index (NFI)	$\geq 0,90$	1.00	Good Fit
Non-Normed Fit Index (NNFI)	$\geq 0,90$	1.00	Good Fit
Incremental Fit Index (IFI)	$\geq 0,90$	1.00	Good Fit

Based on Table 4, most of all indicators show that the model is already Fit SEM or already well. Data from the questionnaire has been able to answer the theory is built.

After the good results already obtained, then the data is processed with a media campaign Influence SEM methods, the importance of the questionnaire answers diagram in Figure 7.



Where :
 X1 = Poster
 X2 = Health seminar
 X3 = Competition
 X4 = Conseling

Figure 8. T score
 Media Promotion Influence to changes of behaviour

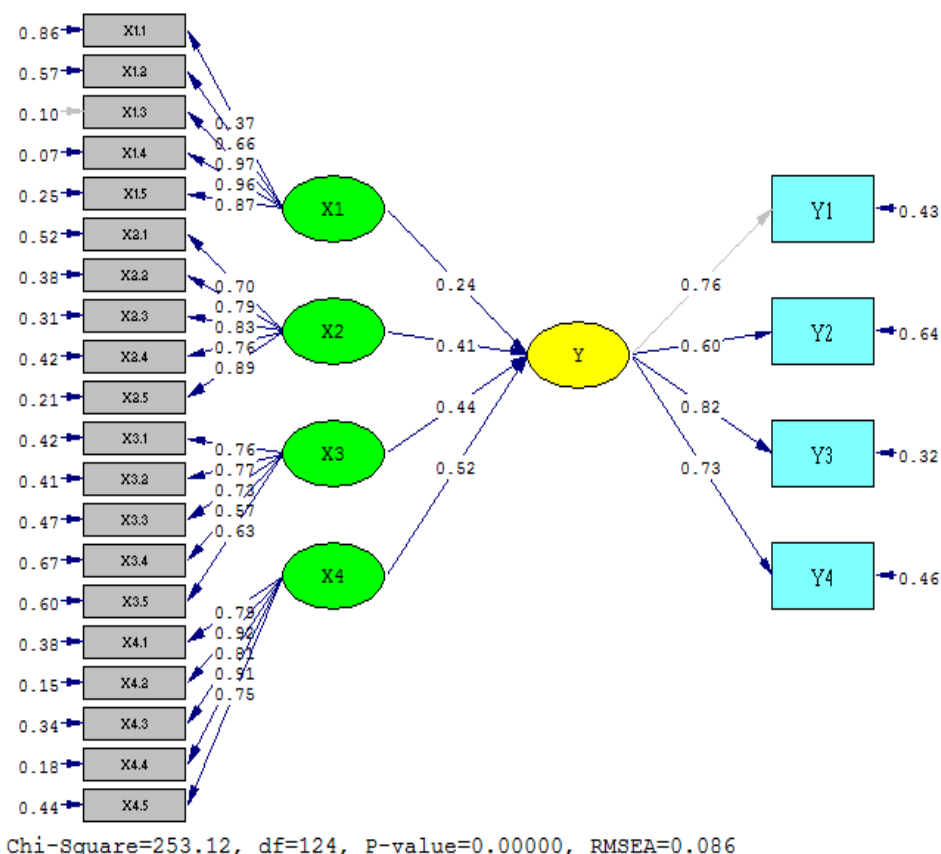


Figure 9. Standardized Loading Factor
 The influence of Media Promotion to behaviour change

Table 5. Test Contributions Factors influence on Health Promotion Media

Factor		Standardized Loading Factor	T Score	Conclusion
Poster	11	0.24	8.56	Significant
Health Seminar	22	0.41	14.37	Significant
Health Competition	X3	0.44	13.03	Significant
Conseling	X4	0.52	15.55	Significant

Based on the results in Table 5, the contribution of media influence poster, Media seminar, health and Counseling Competition with the value t is greater than t table means the posters, media seminars, competitions health and counseling significant effect on the media campaign.

Communication

SEM Test results showed that the most affective promotional media is media counseling because counseling is the core activity overall guidance relating to the alleviation of the problem and facilitate the development of individu. Relationship counseling is different from the situation of the situation, relationship counseling is marked:

- A relationship that is unique and common
- There is a balance of objectivity and subjectivity
- There is a balance elements of cognitive and conative
- There is a balance between pseudonym and clarity
- There is a balance of responsibility

Cavanagh (1982: 1 Cavanagh (1982: 1-2): counseling 2) stated that counseling is a relationship between aid trained with someone who is looking for help, where skills aid and atmosphere on him to help others learn to connect with himself and others in ways in ways that are growing more and more ways to grow and productive. Counseling can affect the relationship from one person to another to influence the action.

With the explanation of the above it is clear that the counseling in health promotion made by XYZ is an appropriate promotional strategies for employees XYZ. Counseling is done by health workers to employees XYZ by the method of two-way communication in which workers can directly get the solution of a health problems and is therefore a good personnel health personnel and workers get a solution of problems the counseling is considered capable of changing a health behavior of workers XYZ , Thus the forms of communication that must be built into a program at XYZ is counseling. Counselling is a two-way form of communication that is effective in conveying the right message targeted.

Managerial implications

Based on respondents' perception that late is tested through Test SEM shows that the promotion of health is considered good and can support healthy behavior in the XYZ, then this will be the input to the XYZ so that promotional health activities can be improved again is moved and add period of the promotion, which was originally performed every two weeks, then increased to every week. Based on the perception correspondent to the statement of factors - factors that affect the health of that factor health services have this level of agreement is highest, then the health service in the XYZ must be improved in particular by adding medical personnel and medical facilities at XYZ, so that workers XYZ can easily consult about his health directly with the experts. Furthermore, a healthy environment quality are factors that are considered important by the respondents, it can be implication with the implementation Housekeeping day every Friday in the neighborhood XYZ office, thus a healthy environment in the XYZ can be created with good and can support a good job.

CONCLUSIONS AND RECOMMENDATIONS

CONCLUSION

Based on the results of research and discussion, it can be concluded that the factors of health influence highest seen in health care factors. In the description of the distribution of respondents' answers to the questions in the questionnaire based on the characteristic table of health services, the statement that the willingness of doctors to provide health services is high enough to support the implementation of a healthy lifestyle well. SEM test results can be seen that the major contributing factors influence health services at 0:33 with t 12.94. Values t is greater than t table (1.96) means significant factors affect health services to health factors. Expressions of respondents to the revelation of health services is quite high. This means that the respondents were satisfied with the health services that are owned by the company. Hereditary factors considered to have no effect on healthy lifestyle changes in the behavior of respondents because of the great contribution of hereditary factors influence the health of 0:07 with 1:01 t t value is smaller than t table (1.96) means that hereditary factors do not significantly influence the health factor.

In health promotion through the media presented, it appears that the media counseling is considered the most media affect the behavior of healthy lifestyles of respondents. The statement that the message is easily understood and remembered counseling can support her lifestyle. The results of the SEM test counseling contributes influence of 0:52 to 15:55 Rated t t is greater than t table (1.96) means that counseling was significantly against the media campaign.

SEM Test results showed that the most affective promotional media is media counseling because counseling is part of the core communication activities overall guidance relating to the alleviation of the problem and facilitate the development of individual. Counseling is part of interpersonal communication that is considered to be highly effective in influencing healthy lifestyle changes a person. Then the appropriate communication strategies in health promotion is the counseling method.

SUGGESTION

From the findings, it seemed that the media campaign in the XYZ program had a positive impact on employees. Media campaigns can influence employees to change health behavior. Furthermore, this excellent program to run regularly. healthy workers impact on increasing performance and productivity. From the other side can be seen that health can reduce the cost of workers' health insurance. The decrease of BMI workers berbading line with the reduced health insurance costs.

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