



CONSTRUCTION OF TYPE C BEHAVIOR PATTERN SCALE

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ABSTRACT

This paper explains the construction of a scale for research purposes to assess Type C behaviour pattern. There were sixty eight on the questionnaire which was administered to 151 adults of ages between 18 and 70 years. Factor analysis was applied for data reduction. Cronbach's alpha was computed as 0.868. The length of the scale was reduced to 14 items based on non-significance at 0.05 level of the correlations between the scores. A panel of 10 experts established content validity and 14 items extracted were retained. Concurrent validity was found to be very high when it was correlated with Emotional Regulation questionnaire (ERQ). The predictive validity was established with PHQ-9 and the scale predicts the incidence of depression in individuals.

Keywords: *Type C behavior pattern, construction, factor analysis*

Introduction

History of Personality testing: Personality assessment was largely influenced by the work of Sigmund Freud. 'The interpretation of Dreams' by Freud published in 1900 is considered one of the influential works in understanding the psychological factors of personality. Neo Freudians like Carl Jung, Erik Erikson, Alfred Adler also contributed to the understanding the complex processes in personality. One of the earliest Personality assessment was devised by Carl Jung, the automated word association test. This work influenced the development of many personality tests including Myers Briggs Type Indicator.

In the early 20th century, less empirical forms of personality tests began to surface. It was after the World War I, the personality testing entered into the phase of modern assessment. Robert Woodworth was commissioned by United States army to develop an instrument to measure the emotional stability of the Army recruits. He created a questionnaire which consisted of 116 yes or no questions. Though his measure had psychometric ability, the face validity of the test allowed 'faking bad' or 'faking good'. By addressing this issue, Louis Thurstone in 1930 developed Thurstone Personality Schedule to assess neurotic symptoms in civilian and army men. During this time, Projective assessments of personality with credible psychometric like Rorschach Inkblots technique, Thematic Apperception Test were also created. By the end of the 20th century various theories of personality and assessments were taken into shape.

Type theories of Personality: The earliest known theory of personality is that of the Greek physician Hippocrates (c. 400 B.C.), who explained four temperaments namely: sanguine, phlegmatic, melancholic and choleric. The amount of each humor determined the individual personalities. Hippocrates' system remained influential in Western Europe throughout the medieval and Renaissance periods. The theory of temperaments is among a variety of systems that deal with human personality by dividing it into types. In 1940's William Sheldon, an American psychologist came up with a modern typology in which he classified personality into three categories namely; the endomorph, ectomorph and mesomorph. This classification was done on the basis of body types.

The theories on Type A, B, C and D personalities are relatively new among the Type theories of personality. These theories propose that each of these types of personalities has characteristics which make them more susceptible to different health conditions. They suggest that a person with type A personality is more susceptible towards Heart Diseases, people with type C personalities are more prone towards developing cancer, especially breast cancer and people with type D personalities are more likely to develop depression.

The Type C personality: Type C personality was often regarded as 'Cancer Personality'. This is a much disputed theory and there isn't much research done enough to prove its claim of predicting Cancer. They characteristics of Type C personality are:

- They are perfectionists
- They are consistent and dependable
- They are thoughtful
- They are emotionally repressed
 - --They are unassertive

Emotional suppression and perfectionism are two key characteristics of Type C individuals. They prefer simply denying their feelings rather than expressing them. They are very detail oriented and take as much as time to make anything perfect. They are exactly opposite to Type A in meeting deadlines, where the former prefers their work to be organized and perfect than meeting deadlines. They cannot say “no” to others which can become very stressful in many situations. This frequent stressful situation can make them prone towards many illnesses.

People with type C personality want to be involved in things that are controlled and stable. They desire facts, accuracy, and logic. They may not appear very expressive at times because they don't really want themselves to display a lot of emotion. They are excellent thinkers who will look at all aspects of an issue before taking a decision. Once they make a decision, they will have the facts to back it up so anyone who challenges them better be prepared. They prefer prioritizing things and want to have their tasks clearly defined.

Objective of the study: Personality assessment has been a subject of interest for many centuries. It is widely used in various fields such as hiring process, evaluate business partners etc. The Jenkins Activity Survey(Jenkins, Zyzanski, & Rosenman, 1979) is widely used to determine Type A and B. The D Scale-14 (Johan Denollet,2010) is used to identify Type D personality. There is no valid scale or questionnaire to assess Type C personality till date. The purpose of this study is to construct and validate a Type Cbehaviour pattern scale.

Methodology

Likert rating scales were used in this study. Likert (1932) developed a method of measuring attitudes by asking them to indicate their level of agreement or disagreement to a topic which helps in understanding the cognitive and emotional components of attitudes. Likert-type or frequency scales use fixed choice response formats and are designed to measure attitudes or opinions (Bowling, 2012; Burns et al, 2014). these ordinal levels measures the level of agreement or disagreement.

Construction of the Scale: There were 68 items in which 36 items were done positive scoring(i.e. strongly disagree=0, somewhat disagree=1, disagree=2, neutral=3, somewhat agree=4, strongly agree=5) and 32 items were given negative scoring(i.e. strongly disagree=5, somewhat disagree=4, disagree=3, neutral=2, somewhat agree=1, strongly agree=0). The reason for reversing the scoring of negative items was to provide a total score that would reflect positiveness in what was being measured by the questionnaire (Tuckman et al, 2012). The assumptions made while constructing the scale was

- a) The items are homogenous in nature
- b) Each item measures a trait for Type C personality
- c) Each item has a high correlation with the total score on the scale

There is a lot of limitations while using a quantitative method for measuring personality. So the purpose of this questionnaire is restricted to an understanding of how an individual responds in a social scenario. Also, Type C personality measured here is not for predicting a Cancer personality but for identifying the behaviour pattern of individuals.

Pilot Research: A pilot research was conducted on 351 adults of ages between 18 and 70 years- 188 women and 163 men. The items were constructed after getting inputs from subject matter experts. Two copies of the scale was given out to language experts and subject experts and was revised based on their comments. Three hundred and fifty one subjects responded to the questionnaire online as well as paper pencil versions.

Statistical Analysis: Statistical Analysis was carried out in SPSS Version21.0 to interpret the results of the pilot study. The score of first five and last subjects of first 5 items and sixty sixitem are given in Table1.

Table 1 showing the scores on first five items and sixty eighth item by the first five subjects and three hundred and fifty first subject.

No:	Item1	Item2	Item3	Item4	Item5	Item6	.....	Item66	Total
1	1	0	3	4	1	2	.....	3	150
2	3	1	3	0	3	2	.....	4	185
3	4	2	3	4	3	2	.....	4	197
4	5	1	2	2	3	2	.....	4	191
5	2	0	4	1	2	5	.....	3	158
.....
351	5	4	3	2	5	4		4	189

The cronbach's alpha of the initial items were found to be 0.668. Since it wasn't found sufficient enough to have a high internal consistency, scale variance of items deleted were examined. According the corrected item-total correlation, each items to be excluded was selected at each stage. More than two items were not deleted at a single step. The data was reduced to 24 items to obtain a maximum of 0.883 as cronbach's alpha which indicates a good internal consistency. These items were used for factor analysis for data reduction.

Table 2: showing the reliability statistics and Item total statistics of the initial scale, after item analysis and after factor analysis

Cronbach's Alpha	No: of Items
0.668	66
0.883	24
0.838	14

The extraction method used was the principal component method. The extraction method used was Oblimin method with kaisernormalisation. The method of oblique rotation was used with an assumption that the underlying factor have very low correlation. The rotations were found to be converged at 7 iterations. The reliability analysis was carried out to examine the internal consistence of the scale with 14 items and the cronbach's alpha was found to be 0.838. This proved that the final scale of 14 items has a high internal consistency and produce very reliable results.

Table 3 showing the pattern matrix of factor analysis of the selected items carried out

	Component		
	1	2	3
Item 1	.486		
Item 2	.687		
Item 3			.525
Item 4			.516
Item 5			.480
Item 6	.580		
Item 7		.635	
Item 8		.752	
Item 9		.812	
Item10		.669	
Item 11	.773		
Item 12	.731		
Item 13			.713
Item 14			.742

Extraction Method: Principal Component

Analysis.

Rotation Method: Oblimin with Kaiser

Normalization.^a

a. Rotation converged in 7 iterations.

Table 6 showing the component correlation matrix

Component	1	2	3
1	1.000	.279	.345
2	.279	1.000	.282
3	.345	.282	1.000

A panel of experts with subject experts assessed the content validity of the scale. They were asked to rate the items as “essential”, “useful but essential” and “not essential”. Content validity of each items was calculated using the formula $CVR = \frac{n_e - (n/2)}{(n/2)}$. All the items were retained as the CVR value of each item was closer to +1.00. There were 10 experts so items with more than +.62 as CVR were retained.

Table 7 showing the CVR values of each items

Item	CVR
1	0.80
2	1
3	1
4	1
5	0.80
6	1
7	1
8	0.80
9	0.80
10	0.80
11	1
12	1
13	1
14	1

Emotion Regulation Questionnaire (ERQ) and Type C behavior pattern Scale was administered to a group of 108 participants. Emotion Regulation Questionnaire (ERQ) is a 10 item self-reporting questionnaire with 7- point rating scale developed by Gross and John (2003). It was developed to assess two major emotion regulation strategies namely Reappraisal and Suppression. One of the main characteristics of Type C personality people is emotional suppression. It involves not expressing the experienced emotion to make the experience of emotion not evident to others through facial expressions and other behavioral manifestations of the emotion (John & Gross 2004). Though emotional content generated is present, the person controls the outward expression of that emotion to psychologically relevant situation (Gross & Thompson 2007). This eventually results in increased levels of negative emotion, increased rumination regarding negative mood, decreased interpersonal function and quality of life (Butler et al., 2003; Gross & Levenson 1997; Gross & John 2003; John & Gross 2004). The correlation coefficient between two measures was found to be significant ($r = 0.818, p = .000$) which shows that the construct validity of Type C behavior pattern scale is quite high.

Table 8 – Correlation between scores of Type C behavior pattern scale and Emotional Regulation Questionnaire (ERQ)

Type C behavior Pattern Scale	Emotional Regulation Questionnaire	
	<i>r</i>	<i>P</i>
	0.818	0.00

People with Type C personality are more prone towards developing depression. A group of 200 participants were administered with Patients health Questionnaire-9 to assess depression as well as the type C behavior pattern scale.

Table 9- results of t test of two groups

		t	df	Sig. (2-tailed)
Type C	Equal variances assumed	5.387	198	.000
	Equal variances not assumed	4.829	96.005	.000

64 participants were found with symptoms of depression and 136 participants had no symptoms of depression. Student's t test results showed significant differences in scores of Type C behavior pattern scale between the two groups. This establishes the predictive validity of the scale.

Summary and Conclusions

The purpose of this study was to construct a Type C behaviour pattern scale to identify individuals with type C personality traits. A pilot study was conducted with a scale consisting of 66 items and reliability analysis was carried out. The cronbach's alpha was found to be 0.883 for the selected 24 items. These items were selected as the final items for the Type C behaviour pattern scale to go through factor analysis. With principal component method and oblimin rotation, 14 items were extracted. A reliability analysis was done further to examine the internal consistence of the scale and the cronbach's alpha was found to be 0.838. A panel of 10 experts established content validity and 14 items extracted were retained. This indicated that the final scale will produce reliable results. Concurrent validity was found to be very high when it was correlated with Emotional Regulation questionnaire (ERQ). The predictive validity was established with PHQ-9 and the scale predicts the incidence of depression in individuals. The revised Type C personality Scale can be used to have an understanding of the individuals rather than making an indepth study of their personality. The traits of Type C personality denotes a lot of emotional distress which can lead to a lot of behavioral and physiological manifestations. This

scale can be used in the counseling settings to understand how an individual behave in social situations.

Appendix A : The final version of Type C behavior pattern Scale

TYPE C Behavior pattern scale

Name:

Age:

Gender:

Kindly go through the items given below. There are 14 items and each items describe about how you would react in many situations. Indicate your agreement or disagreement by selecting your response using this scale

0-strongly disagree

1-disagree

2-disagree somewhat

3-agree somewhat

4-agree

5-strongly agree

1. If I am assigned with a task, I am more concerned about finishing the task
2. I am consistent in everything I do
3. people say I am very thoughtful
4. I like to weigh pros and cons before making any decision
5. People say I am very fair and objective
6. I always want to be right and accurate
7. People usually take advantage of my generosity
8. I find it really difficult to refuse peoples requests
9. I am very careful not to hurt the feelings of others
10. I usually avoid any conflicts with others
11. I am very calculated and precise

12. I am always motivated to complete any task on time
13. When I am faced with a problem, I would like to take as much as time needed to analyze and understand the problem before finding a solution
14. I am very confident in finding solutions and making decisions

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