

My research is a clinical investigation of the constructs of perceived locus-of-control and the related construct of self-control.

This research grew out of my long term interest in human motivation and the various factors controlling human behavior. My advisors and co-researchers on this project were Steve Potkin and Dean Shapiro.

The following are some basic definitions;

Perceived locus of Control: This describes the degree to which an individual perceives that a reinforcement follows from, or is contingent upon, his own behavior or attributes, versus the degree to which he feels the reward is controlled by forces outside of himself and occurs independently of his own actions. Therefore you can have a primarily external locus of control or primarily internal locus of control.

External locus of Control: When a reinforcement or reward is perceived as not contingent on one's own actions but contingent on something external to himself such as luck, chance, or powerful others.

Internal locus of Control: the general perception that reinforcement or reward is contingent upon one's own behavior, or one's own relatively permanent characteristics.

Research by Julian Rotter in the 1960's found that individuals have generalized beliefs or expediencies concerning locus-of-control. In other words, people had a primary belief in a general external locus-of-control or external locus-of-control or somewhere inbetween this continuum.

Rotter studied this by first developing a 23 item forced choice questionnaire which measured a persons locus of control. This battery has been extensively refined to provide reliability and validity. Using this battery of questions he found that he could classify people as falling into either the external half or internal half of the continuum. This is called the I-E scale and is one of the measures used in my study.

This concept of locus-of-control is relevant to physicians and all people in the healing professions because of a lot of health related behavior is partly determined by a persons locus-of-control. Of course, many other factors come into play as well.

This is borne out by a number of studies which found, for example, a significant correlation, which was independent of intelligence, between internality-externality and the amount of information that was gathered and remembered by hospitalized patients about their condition and treatment.

Another study found that non-smokers were significantly more internal than smokers.

During the 1970's a subsequent self-report type questionnaire was developed which was felt to be a refinement of Rotter's original I-E scale. It was called the Multidimensional Health Locus of Control scale and was developed by Wallston at Vanderbilt University. It also measured internal-external locus-of-control but went a step further by dividing the external component into a chance or fate component, and a powerful other component. I also used this instrument in my study.

In general, research has shown that so called internals show greater motivation to take action to achieve what they want and have a greater sense that they can control the environment. Perhaps related to this feeling that one can have an influence on the environment around him, is a feeling that one can control himself. The second construct which I want to briefly discuss as part of the introduction, and that is the construct of self-control or sense-of-control.

The concept of self-control is one which mankind has thought about and written about for hundreds, perhaps thousands of years. Both Eastern & Western psychologies place considerable emphasis on concepts of control and self-control and yet today it is still difficult for anyone to agree on its meaning. When analyzing the term self-control, it is hard to stay away from philosophical considerations such as free will vs. determinism. The belief system or assumption

upon which the construct is based is that individuals are not absolutely determined, and can gain more autonomy and free choice and do have the ability to effect change in their lives.

These are many clinical areas where an impairment of control has been suggested as one of the central features. This includes depression, the addictions, stress and anxiety disorders, the eating disorders, Type A behavior and coronary disease. Also impulse control disorders, gambling, violent behavior and others.

One of the main problems with research in this area is that there is no agreed upon definition for terms related to human control and different researches use different words.

Because of this apparent vagueness, Dr. Shapiro has done a great deal of research in recent years with the aim of better characterizing the construct of self-control and breaking it down into its component parts. With this aim in mind he has developed a control inventory and Part III of this inventory is on the last page of the handout. This instrument breaks control up into four quadrants. The validity of this breakdown is based on past research, including factor analytic studies.

The Quadrants are diagrammed in Figure one. The quadrants are, #1, positive assertive, which is associated with words such as decisive, self-starting- and confident. Quadrant 3 negative assertive is associated with words such as impatient and manipulating. Quadrant 2, positive yielding, is associated with words like listening and accepting. Quadrant 4, negative yielding, associated with words like timid, and dependent.

The inventory, consist of 50 words, each reflecting one of the 4 quadrants. Beside each word, the subject makes a choice between 1 & 4 describing how well that word describes him. You get an average score from each Quadrant by adding up the numbers chosen on the scale beside each word belonging to that Quadrant, and then dividing by the number of words. So for each person you get 4 numbers or means representing the four Quadrants. Next, by grouping the subjects, for example according to diagnosis, you can get four means for each group of subjects.

So, the project that I did involved evaluating the constructs of locus-of-control and sense-of-control across three different DSM III diagnosis as well as looking at normals. The three diagnoses I compared were Generalized anxiety Disorder, Panic Disorder, and Borderline Personality Disorder. The subjects from the three diagnostic groups were part of three other larger studies being conducted by Dr. Potkin and his co-workers. My study was an add on study. I evaluated at least 15 subjects in each group. The Panic Disorder patients were part of a double blind, placebo controlled study evaluating the efficacy of Fluvoxamine in panic disorder. The GAD patients were recruited for a study evaluating the efficacy of a drug called Ondansetron (Drug: GR-C507/75), in treating GAD. The Borderline patients were part of a study evaluating the efficacy of Buspirone, in that population. The subjects were recruited by way of newspaper advertisements, flyers, and news reports about research at UCI on both T.V. news and in newspapers.

The selection criteria for the GAD patient's specified that they meet DSM III-R requirements for GAD, manifested by a Hamilton anxiety Scale score of 18 or more, a Covi Anxiety Scale score of nine or more and a Covi score greater than the Raskin Depression Scale. Subjects were excluded from the study if they had a history of ethonal or drug addiction, had an acute or unstable medical disease, seizure disorder, or any other psychiatric or neurological diagnoses. The Panic disorder subjects and borderline subjects both met DSM-III criteria and there were similar exclusion criteria as for GAD subjects. Normal controls were recruited from a variety of places including a list of normal controls kept in the outpatient research trailer. At the time of entering the study, all subjects had to be free of psychiatric drug. It was at the time of entering the study that I gave the subjects the three rating instruments which I used. These were the three instruments I've mentioned before, The Rotter I-E scale, the Wallston Multidimensional Health Locus of Control Scale, and the Shapiro Control Inventory. After collecting the data, I compared the results across the diagnostic groups.

Table I on the second page of the Handout shows the results

from the SCI. Across the top you can see the 4 groups of subjects with the mean scores from the Quadrants, below them. An analysis of variance showed that there was a statistically significant main effect by diagnosis.

Next a series of paired comparisons was done, using analysis of variance, to see if there was statistical significance. We compared the diagnostic groups, two-at-a-time, quadrant by quadrant. This is shown on table IV on the third page of the handout. Only the statistically significant comparisons are listed here. If not listed, that means it was not significant. You can see that there are quite a few significant comparisons, especially when looking at the patient groups compared to normal controls. This was also some significant differences when looking at the panic group vs the Borderline, and PAN compared to GAD. When comparing Borderline to GAD, we found no significant difference.

The results are shown in graph form, if you look at the fourth page of the handout. This makes it easier to visualize and think about and we can make some general statements based on this. Each graph represents one of the four quadrants.

First of all, the normals are obviously different from the psychiatric patients in all quadrants with one exception, that being the panic group in the Negative Assertive Quadrant. In this Quadrant you can see that the GAD and Borderline groups are more negative assertive. Looking at the top two graphs you can see that the normals are more positive assertive, as well as more positive yielding than the patients.

Next, if you focus on the panic patients you see that they scored low on both the positive assertive and negative assertive quadrants. So, in general, they tended to be the least assertive of all the groups.

One surprising finding was the relative similarity between the borderline group and the GAD group. Before completing the study we had speculated that the GAD and Panic groups would be the most similar in all Quadrants since they are both axis I disorders, related to anxiety. We expected the borderline group to be the

most dissimilar. But if you look at the positive assertive quadrant and the negative assertive quadrant, you can see that the GAD group and Borderline group are similar, while panic stands out as different.

So this finding wasn't expected at all. You could speculate on a number of different explanations for this. One possible interpretation is that panic disorder is a more dissimilar or discrete pathological entity, with acute non-continuous episodes of symptoms, whereas GAD and borderline could be conceived of as more continuous, 24 hour conditions, thereby leading to different coping styles reflected in this data. You could hypothesize other reasons why the Panic group was more dissimilar than the Borderline and GAD groups.

You can see that in the Negative yielding Quadrant, the normals were the least negative yielding, by far.

Previous studies have shown that in our culture, it is considered to be more socially desirable to be assertive than yielding. So that when comparing the assertive quadrant, to the yielding quadrant across from it, you'll consistently find the assertive score to be higher. This held true in my study, except for the panic group which reversed this relationship. So again, the panic group tended away from assertion and toward a yielding stance.

Now moving on to the other two scales I used. If you look at Table III on the second page of the handout you'll see the results from the Rotter I-E scale. This is the locus-of-control scale. As expected, the normals have the most internal locus-of-control, with a score of 7.5. The borderline group and GAD group are the two most external groups. Again, the panic group is the most dissimilar, when compared to the other two patient groups.

The results from the Wallston Multidimensional Health Locus-of-Control Scale is shown on Table V on the first page of the handout. You can see that there are three subscales; IHL,PHL, and CHL. The PHL and CHL subscales represent two components of external locus of control. Again, as expected, the normal group saw

themselves as the most internal. Here, the higher the number, the more the person saw themselves as being internal. The same is true for PHL and CHL, the higher the number the greater the group saw themselves as fitting in that subset. It was interesting to see that the normals scored the highest in the PHL subset, meaning they attributed the greatest amount of control to powerful others.

So, to sum it up this data is a snapshot in time, a one time look at four different groups, using three different scales. Obviously, a great deal more research needs to be done in order to explore further the various aspects of the construct of control. As far as clinical utility is concerned, there are several possibilities for applying information such as this. From previous research there is evidence that the locus of control construct is relevant to the prediction of health behaviors as well as sick role behaviors. Internals appear more likely to engage in positive health and sick role behaviors. To the extent this is true, the healing professions may need to involve themselves in training patients to hold more internal beliefs. But on the other side of the coin, there may be "conditions under which perceived control is more likely to have negative than positive effects. In laboratory studies, there are always some subjects who opt for uncontrollable, rather than controllable aversive events when they are given a choice. At the psychological level, excessive feelings of responsibility may be detrimental, and personal control often places heavy demands on people." Therefore, instruments which measure control related variables may have utility in assessing and predicting how much perceived control is optimal and this could have implications for guiding therapy and treatment.

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