Indian J. Psychiat., 1994, 36(2), 79-84.

DEVELOPMENT OF MOTIVATION SCALE - CLINICAL VALIDATION WITH ALCOHOL DEPENDENTS

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This study focusses on the development of a comprehensive multi-dimensional scale for assessing motivation for change in the alcohol dependent population. After establishing face validity, the items evolved were administered to a normal sample of 600 male subjects in whom psychiatric illness was ruled out. The data thus obtained was subjected to factor analysis. Six factors were obtained which accounted for 55.2% of variance. These together formed a 80 item five point scale and norms were established on a sample of 600 normal subjects. Further clinical validation was established on 30 alcohol dependent subjects and 30 normals. The status of motivation was found to be inadequate in alcohol dependent individuals as compared to the normals. Split-half reliability was carried out and the tool was found to be highly reliable.

Key words: motivation, factor analysis, alcohol dependence, clinical validation.

INTRODUCTION

Motivation is considered important in the integration of personality and in achieving mental health. It has long been regarded as an important factor in treatment. Lack of proper motivation has been used to explain the failure to enter, continue, comply and succeed with treatment especially in clinical conditions like alcoholism (Miller, 1985; Miller et al, 1933). Rosenbaum & Horowitz (1983) emphasized that reconceptualizing motivation will be helpful in associating motivation with therapy. They also highlight that it requires replacing unidimensional, static, 'quality' concepts of motivation with multidimensional, dynamic, motivational constructs.

Since motivation is a significant component in response to therapy, it is imperative that the motivation status of clients be assessed. It may prove to be a prognostic factor as well as an indicator of modes of psychotherapeutic intervention which will facilitate positive change in the individual. Recently Rollnick et al (1992) have emphasized the importance of motivation for change and have developed a twelve item 'Readiness for change' questionnaire which had satisfactory psychometric properties. This questionnaire provides a short and convenient measure of readiness to change which may be used in conjunction with brief opportunistic intervention for excessive drinkers. Klingemann (1991) reports that an addict goes through a conscious precontemplation stage which is transformed into a serious motivation to change, triggered off most often by individual positive events.

The present investigation attempts to develop a tool which is formulated on a sound theory of motivation (Maslow, 1970) which provides the hypothesis for knowing both the adaptive and growth aspects of motivation in normal and disturbed individuals. The purpose of the study is to prepare a tool which is comprehensive and yet provides aspects which may be specific for clinical conditions like alcohol dependence. It was also thought necessary that the need for change, which forms the essence for any motive, may find a highly reliable reflection in the aspects of the self-concept in an individual.

AIMS

The aim of the study is to develop a tool based upon evoking dimensions of motivation that are present in the normal population and to study this in alcohol dependents. This is planned so that the distortions of motivation seen in alcohol dependents may be subjected to change, thereby helping clients to interact like normal persons. This may also enable better understanding of their need for change.

METHOD

The available tools were scrutinized for items which represented different dimensions of motivation. Amongst these dimensions, only those which appear to measure motivation for change in alcohol dependents were taken for the present study. On the basis of the theory of motivation of Maslow, the tools which incorporated some of his dimensions were taken into account. The dimensions like self-esteem, security-insecurity, social desirability, extrinsic-intrinsic motivation or external-internal locus of control, affiliation, achievement and growth motivation were tentatively selected. Growth motivations included self acceptance, self regard,

well being, capacity for intimate contact and self actualization.

The alcohol dependent subjects were interviewed with the help of an open ended schedule to find out the different dimensions of motivation that would emerge from them and understood by them in the same way as defined. It was decided to examine alcohol dependents from different sources like: (1) those attending out patient and inpatient treatment programs in the hospital, (2) those who were attending Alcohol Anonymous groups and (3) those who were abstinent for a period of six months in the year. In each group thirty male subjects were examined. These subjects were interviewed with questions like "Do you want to change?" "What are the reasons for change?" and "What makes you change?"

The content of the responses were analyzed and categorized in terms of the dimensions of motivation under study, independently by the investigator as well as the supervisor of the study. It was interesting to note that the direct expressions of the above groups would fit into the more generalized statements found in the established scales developed to measure the different dimensions of motivation already mentioned.

Further, an operational definition was attempted. Motivation was defined as the individual's "willingness to change for the better" "to improve his way of living, thereby increasing his self-esteem, feelings of security, sense of belonging and attaining self-actualization". From all the above sources, nine hundred and forty one items (941) were selected. From this group of items, the number of items repeated, ambiguous items and difficult items, were deleted.

In all, three hundred and thirty four (334) items were retained for further examination. These 334 items which were found to be fit, were converted into statement form. Care was taken to avoid acquiescence-response set. In order to elicit the responses, a five point scale was chosen as McKelvie (1978) states that, five point scales are the most reliable ones and evidence suggests that there is no psychometric advantage in a larger number of scale categories. In view of the above, it was decided to adopt a Likert type of five point scale with the following dimensions: Strongly Agree (SA), Agree (A), Undecided (UD), Disagree (DA) and Strongly Disagree (SD).

Face validity was done by the method of assessment by expert judges. Five judges who had more than ten years of clinical and academic experience in the field of clinical psychology were approached. The definition of each of the aspects or dimensions of motivation was presented. After reading the items, they were requested to respond to each item in five ways: (1) whether the items categorized under each aspect represented the claimed facet, (2) whether the format of the item was suitable for a point scale with five response categories, (3) whether the items were not culturally over specific, (4) whether all the items could be comprehended by a literate adult with a minimum seven years of education, and (5) whether the format of certain items were appropriate. After obtaining the responses from judges, only those items which elicited complete agreement among three or more judges were retained for the study. Out of the three hundred and thirty four (334) items, there was an agreement on 298 items. The other 36 items were dropped. Changes were affected in the items as per the suggestions of judges. All six aspects of motivation were retained.

A demographic sheet was prepared to get details of age, education, and occupation of the subjects. A sample of six hundred (600) normal male subjects in the age group of 25 to 50 years (Mean 12.99; SD 2.50) were drawn from industrial establishments. From the information obtained, psychiatric illness was ruled out and they were non-alcoholics. The income of the subjects ranged form Rs. 500 to Rs. 4000 per month; they were predominantly from a lower middle income group. There were 591 subjects who were employed and the other 9 were unemployed.

At the out set, these 600 subjects were briefed by investigators regarding the need for developing a psychological instrument which would be of great help in the assessment of motivation in the clinical population. They were informed that this was a test to indicate their motivation to change for the better. They were also requested to be very frank in giving answers.

FACTORIAL VALIDATION

After obtaining the information from the judges with regard to face validity, the 298 items were presented to normal subjects and the data obtained from them was subjected to factorial validation. This was done to strengthen the tool from the statistical point of view so that the different aspects of motivation would be delineated. Factor Analysis was employed (1) in order to examine whether motiva-

tion would emerge as an unidimensional or multidimensional construct, and (2) to examine if the same factors of motivation as validated by the judges, or some totally different factors, would emerge.

It was decided to apply principal factor analysis with orthogonal varimax rotation. The inter-correlation matrix of the 298 x 298 items of the 6 aspects or sub-scales was prepared. The six sub-scales were (1) Self-esteem, (2) Security and Insecurity, (3) Achievement-Affiliation, (4) Extrinsic-Intrinsic motivation, (5) Social Desirability, and (6) Growth motivation.

RESULTS

The factor loadings were subjected to orthogonal varimax rotation. Primarily, the purpose was to see if the hypothesized six scales would emerge in the factor analysis. In all 18 factors emerged, but out of which only 6 factors were significant. Analysis corroborated with the 6 subscales. Moreover, the 6 factors together accounted for 55.22% of the variance, whereas all the other 12 factors together accounted for only 39.9% of the variance, no factor accounted for more than 4.44% of the variance. Hence, only 6 factors were retained. Following Gorsuch (1974), a factor loading of 0.3 was considered to be significant. Thus, variables possessing significant correlation and items with the highest factor loading on a particular aspect were used to identify and define factors.

With regard to the number of items for each factor, the opinion as put forth by Comrey (1988) was considered, and hence, twenty items were

Table 1
The six factors isolated and their content

Factors	Variance Covered per cent	No.of items with loading above 0.3	Maximum loading available	Content reflected the aspect	Name of the factor
Factor I	17.12	20	0.59	Self-esteem	Self-esteem
Factor II	12.68	20	0.63	Intrinsic locus of control	Locus of control-internal
Factor III	6.24	10	0.53	Drinking related intrinsic locus of control	Drinking related locus of control-internal
Factor IV	5.87	10	0.48	Trust-accuracy in judgement values positive mental health	Growth motivation
Factor V	5.72	10	0.69	Religious content Faith in God	Religious attitude
Factor VI	5.59	10	0.56	Self-criticality	Self-criticality

Table 2
Sub-scales of the 60 item motivation scale for normalized standard scores of normal male subjects (n=600)

Sub-Scale	Mean	S.D.
I Self-esteem	50.09	10.04
II Locus of control-Internal	50.08	10.75
III Drinking related locus of control - Internal	50.06	10.00
IV Growth motivation	50.33	10.00
V Religious attitude	50.00	10.00
VI Self-criticality	50.00	10.00

Table 3
Standard scores for the six sub-scales of the motivation scale for alcohol dependent and normal subjects.

	Normal subjects (n=30)		Alcohol dependent subjects (n=30)		't' value	Significance level
	Mean	S.D.	Mean	S.D.		
I Self-esteem	50.90	6.06	35.76	8.04	6.28	**
II Locus of control - Internal (Intrinsic motivation)	46.92	8.32	40.94	6.43	2.32	*
III Drinking related locus of control Internal	53.28	7.88	35.17	12.35	5.05	**
IV Growth motivation	50.06	9.02	35.63	6.34	5.34	**
V Religious attitude	47.69	7.05	48.14	8.37	0.16	NS
VI Self criticality	51.54	10.06	41.33	8.35	3.19	**

*=<0.05; **=<0.01; NS = Not significant.

retained for the first two factors and ten items for remaining four factors. This method not only facilitated the scale to be economical but also to bring about balance within the scale between factors. Therefore eighty items with significant correlation were used for the final scale to assess motivation. This scale with less than 100 items may also facilitate the clinical sample to respond to the items without losing interest in a short span of time.

DISCUSSION

The factors which emerged significantly are shown in Table 1. Six factors contribute to the major portion of the variance. Therefore, it can be surmised that the motivation scale is not unidimensional but multidimensional in nature, which has been emphasized by Romapal (1982) and Rosenbaum and Horowitz (1983). The scoring is done on a five point scale. On this motivation scale, a higher score indicates higher motivation and is a healthy indicator, whereas lower motivation is indicated by lower scores. The meaning of the aspects of motivation as used in this work is provided for the purpose of interpretation.

Self-esteem: Self-esteem in general refers to the perception the individual possesses of his own worth. It refers to the individual's sense of personal worth, his feeling of adequacy, worth and value as a family member. In addition, it reflects the person's sense of adequacy and worth in social interaction with other people in general.

Extrinsic-intrinsic motivation or external-internal locus of control: Internal or intrinsic locus of control refers to the extent to which an individual is self motivated, directed or controlled. The extent to which the environment, luck, chance, influences his behavior is external or extrinsic locus of control.

Drinking related locus of control - internal: This represents the aspects of attribution which are intrinsic in nature but predominantly drinking related. The external orientation is associated with higher anxiety and distress which may in turn influence motivation for change in a negative manner.

Growth motivation: This reflects positive mental health aspects, like trusting one's ability to size up in any situation and being certain of one's relationship with others. It also refers to being content with life and being assertive.

Religious attitude: This reflects contents such as attributing success and failure to God and feeling deeply about religious fulfillment in one's life. It also indicates that faith in God helps one obtain peace of mind.

Self-criticality: This means that the person is aware of one's own assets and short comings. This self criticality is viewed as a positive aspect of oneself.

These 80 items thus retained formed the final scale. Aspects like social desirability and affiliation-achievement which were originally incorporated as dimensions did not emerge as significant factors. Certain items of the security-insecurity scale emerged with significant factor loadings along with the self-esteem factor. Further, the responses obtained for the 80 items motivation scale on the normal sample were scored and the raw scores were calculated. Based on this the standard scores were derived. Standard scores of the normative group (n=600) are presented in Table 2. Since this was a time bound study, only 600 normal subjects could be examined, which may be considered to be a limitation of the work.

CLINICAL VALIDATION - STATUS OF MOTIVATION IN ALCOHOL DEPENDENTS:

After establishing the norms, the next step was to try the motivation scale on a clinical group, i.e., alcohol dependents, to examine whether there would be any difference between the normative and the clinical group. For this purpose, 30 male alcohol dependents as per ICD-9 criteria 303, between 25 and 50 years of age, with education ranging form 7 to 18 years were chosen and 30 normal male subjects of the same range of age and education were selected.

The 80 item motivation scale was administered to each subject individually. Their responses were scored and for the raw scores, mean and standard deviation were calculated. Since the standard scores were available, the raw scores of both the groups were converted to standard scores. For these standard scores, means and standard deviations were calculated for all aspects of motivation. The 't' test was applied to look for any significant difference between the two groups. The values are presented in Table 3.

Results from Table 3 indicate that the alcohol dependents have scored low on all aspects of motivation except religious attitude. This is indicative of significantly lower motivation for change as compared to the normal subjects. Alcohol dependents have low self-esteem and their locus of control is not internal. Their attitude toward drinking related

behavior is also not internal. They have a tendency to blame external factors and the environment for their drinking behavior. They have also scored low on growth motivation, showing low self esteem and self regard. In addition, they show a low score on self criticality indicating that they have problems in objectively perceiving themselves. With regard to religious attitude, there is no significant difference between the two groups.

The normal subjects on the other hand, have high scores (Table 3), showing a good motivation structure. They show significantly high self esteem and their locus of control is internal. With regard to drinking related locus of control, normal subjects opine that by will power and determination one can give up drinking. They also express that one can assertively refuse drinks when they are offered. This finding seems to be clinically significant because this attitude in normal subjects may be used to bring about change in the locus of control of alcohol dependents in a group interaction situation. With regard to growth motivation, normal subjects have indicated positive aspects like high self regard, self acceptance and trust in their capacity to accurately judge the situation. They also have high self criticality and have shown a tendency to objectively perceive themselves. This finding is in line with the earlier study done by Neeliyara and Nagalakshmi (1993).

On the whole, status of motivation in the alcohol dependent subjects requires a change for the better. Their status of motivation would probably throw light on the maladjustment that is present in their social situation. These subjects, with their resistance to change, seem to show a slow rate of recovery in the therapy situation. Very often, the aspect of motivation is assumed to be related to healthy behavior because the greater the motivation to change, quicker is the process of treatment. Further, motivation for change in problem drinkers can be enhanced by relatively brief intervention (Miller et al, 1993).

Other research workers such as Perwin (1983) and Baumeister et al, (1989) have reported that high self esteem scores are associated with a tendency to present oneself in a self enhancing manner that is characterized by a willingness to accept risks and focus on good qualities. They also report that low self esteem subjects showed their motivation to be unclear and controversial. Factors like locus of control, high anxiety and distress have also been found to influence motivation for treatment (Coudret & Huffman, 1982; Donovan & O'Leary, 1978). In the present investigation also, the alcohol dependents are external in their orientation. They show significantly lower need for change as compared to normals on the several aspects of motivation. Normal subjects with their internal locus of control show healthy motivation structure and are adjusted in their social environment. Changing the locus of control from external to internal orientation can bring about a positive change in the motivational status of alcohol dependents.

Reliability: In the present study, the reliability of 80 items motivation scale was calculated by using the split-half method. The reliability quotient was found to be 0.8975 (0.9) which is highly significant and indicates high internal consistency.

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