

PRESUMPTIVE STRESSFUL LIFE EVENTS SCALE (PSLES)—A NEW STRESSFUL LIFE EVENTS SCALE FOR USE IN INDIA

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SUMMARY

Using an open ended question along with Holme's and Rahe's Social Readjustment Rating Schedule on a sample of two hundred adult subjects, a suitable scale of stressful life events experienced by the Indian population was constructed and standardized for two time spaces, that is, last one year and life time. Analysis of various demographic variables for this population revealed no differences on this scale for age, marital state, education and occupation. However, marked sex differences in the perceived stressfulness were observed for three of the items. The scale items were further divided into desirable, undesirable and ambiguous and also into personal and impersonal categories. Statistically significant difference were observed between the desirable and undesirable items, the latter being perceived as more stressful. Norms for total number of life events experienced as well as the presumptive stress score were established for each event for this population. The frequency of occurrence of each event in our population was also obtained. It was calculated that individuals in our society are likely to experience an average of two stressful life events in the past one year and ten events in a life time without suffering any adverse physical or psychological disturbance. The scale is simple to administer to literate and illiterate subjects.

The role of stressful life events in the etiology of various diseases has been a fertile field of research for the last twenty-five years. A host of studies have suggested a positive relationship between stressful life events and subsequent illness (Wolf, 1950; Schmale and Engel, 1967; Holmes and Rahe, 1967). A similar though less consistent relationship between the onset of psychiatric illness and life events has also been reported (Brown *et al.*, 1973; Uhlenhuth and Paykel, 1972; Patricle *et al.*, 1978; Paykel, 1974; Venkoba Rao and Nammalvar, 1976). Serious methodological issues have been raised by various workers regarding the validity and reliability of these scales, for example, (a) content validity of the items included. Hudgens (1974) counted twenty-nine out of the forty-three items of the Holmes and Rahe scale and found them to be

the symptoms of illness rather than their cause, (b) Holmes and Masuda (1974), Dekkar and Webb (1974) have reported that young adults between twenty to thirty years of age report twice as many stressful events on these scales as compared to older subjects whereas the Midtown Manhattan study had clearly shown that stressful events accumulate with age, suggesting that these scales have an excess of items related to young adult life, (c) Many of the items listed may in fact be quite irrelevant to the population being studied especially in a different culture, for example, dating practice is practically non-existent in our culture as conflicts over dowry are non-existent in western culture. (d) Apart from the problem of retrospective contamination that would effect every study trying to correlate the relationship between stressful

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events experienced in the past with a subsequent illness episode, the effect of a number of other intervening variables like age, sex, socio-economic status, family and social support systems have not been adequately studied. (e) Finally, Gerstein *et al.* (1974) stresses that undesirability versus desirability may be a more important variable and here again most existing scales are heavily loaded with undesirable events.

Most of the investigators in India have made use of SRRQ (Holmes and Rahe, 1967) or scaling of life events (Paykel *et al.* 1971) with local translations but without any major modifications to suit the Indian population. In view of the various limitations of the existing scales as pointed out above, it was clear that their application to the Indian setting could not be expected to give any useful results. Hence the authors felt an urgent need to construct a new scale suitable for the Indian population, using stressful life event items relevant to our culture and standardized in our population.

AIMS

1. To construct a stressful life events scale for use in India.
2. To estimate the mean number of stressful life events experienced by normal adult population in his life time and in the past year.
3. To give a quantitative estimate of presumptive stress (weighed scores) as experienced by Indian adult population on each specified life event in order to compare with various other clinical groups.

METHODOLOGY

a) *Sample*

A sample of 200 subjects consisting of both males (N=120) and females (N=80) of different age groups, educa-

tion level and marital status, was taken for study. Criteria used for their inclusion was that they had never sought psychiatric help and had not been suffering from any major physical illness six months prior to their inclusion. Half the sample was taken from urban and half from rural areas. The urban sample of 100 subjects was divided into two parts. In the first, subjects were taken from a sub-urban residential area (A.N.) of the city of Patiala and in the second, the central part of the city (A. B.), was included. The sample from this part of the city consisted mainly of business class people, labourers and daily wagers and some hospital employees who lived in that area. The rural sample group of 100 subjects consisted of people residing in the villages from the Bhadson Block of Patiala District.

b) *Procedure*

Details of socio demographic variables of sample are given below :

	N	%
<i>Age (in yrs.)</i>		
15—54	32	16.0
25—34	53	26.5
35—44	48	24.0
45 & above	67	33.5
<i>Education</i>		
Illiterate	55	27.5
Primary	42	21.0
Matric	42	21.0
College	61	30.5
<i>Occupation</i>		
Farmer	28	14.0
Labourer	22	11.0
Service	47	23.5
Household work	41	20.5
Businessman	22	11.0
Student	29	14.5
Others	11	5.5
<i>Marital status</i>		
Unmarried	42	21.0
Married	141	70.5
Divorced	9	4.5
Widowed	8	4.0

The social Readjustment Rating Questionnaires (SRRQ) of Holmes and Rahe (1967) was used along with an open ended question asked after the administration of questionnaire, i. e. to note down any other stressful event they had experienced and which was not listed above. Thus, by adopting this procedure a new scale consisting of fifty-one life events was obtained consisting of life events commonly experienced by normal Indian adult population. Since some of our subjects were drawn from illiterate and unsophisticated population, we felt that they may not be able to give exact rating in terms of percentages. So initially, we asked them to rate the items into four categories i. e. (i) No stress, (ii) mild stress, (iii) moderate stress, (iv) severe stress. However we found that subjects were reporting the relative stress in relation to specific life events in terms of percentages, mostly in terms of number of paise, rather than in terms of the four categories we had suggested. Hence, subsequently we asked them to give their assessment out of one rupee i. e. how many paise weightage to they give for each individual stressful event. Thus hundred was kept as the highest stress score and zero as no perceived stress. Scale items were classified into (a) desirable, undesirable or ambiguous and (b) personal or impersonal. Thirty subjects were separately asked to rate only those events which they had actually experienced and another sixty subjects were required to rate the imaginary stress that they would have experienced on each life event although they had not actually experienced it. These were then compared to the stress scores given on actually experienced events. The actual stress score gave a mean of 45.01 ± 12.47 and the imaginary scores a mean of 48.36 ± 16.70 . This difference was not statistically significant

($t=0.04$). Thus in contrast to an earlier report by Cleary (1974) that subjects give higher ratings on, non-experienced than experienced events no such difference was evident in our population.

FINDINGS

(i) Total number of life events

As seen in Tables 1 and 2, norms for total number of life events experien-

TABLE 1 Number of events experienced in life time

Population	Mean	10.34 ± 5.40
Sex	Male	10.18 ± 5.24
	Female	11.26 ± 5.28 $t=1.02, N.S.$
Age	Below 35 years	10.53 ± 5.27
	Above 35 years	10.56 ± 5.29 $t=0.03, N.S.$
Marital Status	Married	10.80 ± 5.49
	Single	9.18 ± 4.48 $t=1.19, N.S.$

TABLE 2 Number of events experienced in past one year

Population	Mean	1.90 ± 2.62
Sex	Male	1.62 ± 2.21
	Female	2.46 ± 3.27 $t=1.61, N.S.$
Age	Below 35 years	1.71 ± 2.48
	Above 35 years	2.05 ± 2.73 $t=0.75, N.S.$
Marital Status	Married	1.91 ± 2.71
	Single	1.95 ± 2.20 $t=0.06, N.S.$

ced by the Indian population were as follows—for life time a mean of 10.34 ± 5.40 and for one year it is 1.90 ± 2.62 . This suggests that in our population the average individual experiences an average of ten common stressful events in a life time without suffering any obvious adverse physical or psychological disturbance. Similarly, the mean number of stressful life events experienced over a period of one year without producing overt physical or mental illness is approximately two.

There were no significant differences for males and females, young adults or older age group or for married or single subjects. Thus the drawbacks of existing scales as pointed out in earlier literature does not hold true in our check list which shows even distribution through different age groups.

(ii) *Frequency of occurrence of different life events*

Some events are more commonly experienced by general population e. g. death of close family member, getting engaged or married, pregnancy of wife, illness of family member etc. as compared to death of spouse, divorce, wife starts or stops working and outstanding personal achievement which are experienced by fewer number of subjects in the population. Another observation made in this regard is that stress experienced on commonly occurring events is not very large, this suggests that although a single event may produce less stress but their frequent occurrence over short period of time may have cumulative effect in producing illness equivalent to that produced by an uncommon quantitatively more stressful event. This is an area which needs further studies using a cohort sample.

(iii) *Desirable versus undesirable events*

As we see in Table 3, there were

TABLE 3 *Showing classification of PSE-SCALE EVENTS according to desirability*

Desirable events	Undesirable events
1. Pregnancy of wife (wanted)	1. Death of spouse
2. Marriage of daughter or dependent sister	2. Extra-marital relations of spouse
3. Major purchase or construction of house	3. Marital separation or divorce
4. Appearing for examination or interview	4. Suspension or dismissal from job
5. Getting married or engaged	5. Detention in jail of self or close family member
6. Change of residence	6. Lack of child
7. Change or expansion of business	7. Death of close family member
8. Outstanding personal achievement	8. Marital conflict
9. Gait of new family member	9. Property or crops damaged
10. Going on pleasure trip or pilgrimage	10. Death of friend

some items (10) which were generally viewed as desirable while some were viewed as undesirable (32) by the population. Pregnancy was one item which at times was considered desirable and at times undesirable depending upon whether it was wanted or unwanted pregnancy. There were, however, ten items which could not be classified either as desirable or undesirable, e. g., son or daughter leaving home, change in working conditions, retirement, prophecy of astrologer etc. and we have classified them as ambiguous. The number of undesirable (32) events is more as compared to desirable (10) and ambiguous (10) events—however, their number is relatively less in our scale as compared to other scales.

It has been found that stress experienced on undesirable items is significantly greater ($p < 0.01$) than experienced on desirable items and this may explain why more undesirable events have been included in all existing scales and also reported by our population. It has also been observed that sometimes the same event is perceived as desirable or undesirable by different individuals or by the same individual depending on social circumstances. As in the present study "Pregnancy" has been perceived as both desirable (wanted pregnancy) and undesirable (unwanted pregnancy) at different time, hence in clinical use of this scale this point should be noted down specifically.

(iv) *Individual stress scores*

Individuals vary widely in their subjective response to a similar stressful event depending on number of factors including the individuals personality, social support system (Cassel, 1975) and importance of relation with person or institution. To make an extreme example, death of spouse may be absolutely shattering for one person with a close relationship, while for another, with a serious conflict, death of spouse may be actually a relief from stress. However, in all human experience, an attempt has to be made to quantify the item in terms of mean stress experienced by a majority in that population. For this we have assigned weights to each individual item varying from 0 to 100 and then ranked them according to the perceived stress of each event. The scale as given is rated according to decrease in severity of perceived stress, however in practice we recommend that scale be administered in reverse order (as given in Table 4) i. e. starting from the lowest stressful event to the most stressful event—death of spouse—coming last, as we have found this to be more

TABLE 4 *Showing mean ranked stress scores and S. D. of each item*

Rank No.	Life events	Mean stress score
1.	Death of spouse	95
2.	Extra-narital relation of spouse	80
3.	Marital separation/divorce	77
4.	Suspension or dismissal from job	76
5.	Detention in jail of self or close family member	72
6.	Lack of child	67
7.	Death of close family member	66
8.	Marital conflict	64
9.	Property or crops damaged	61
10.	Death of friend	60
11.	Robbery or theft	59
12.	Excessive alcohol or drug use by family member	58
13.	Conflict with inlaws (other than over dowry)	57
14.	Broken engagement or love affair	57
15.	Major personal illness or injury	56
16.	Son or daughter leaving home	55
17.	Financial loss or problems	54
18.	Illness of family member	52
19.	Trouble at work with colleagues, superiors or subordinates	52
20.	Prophecy of astrologer or palmist etc.	52
21.	Pregnancy of wife (wanted or unwanted)	52
22.	Conflict over dowry (self or spouse)	51
23.	Sexual problems	51
24.	Self or family member unemployed	51
25.	Lack of son	51
26.	Large loan	49
27.	Marriage of daughter or dependant sister	49
28.	Minor violation of law	48

TABLE 4—(Contd.)

Rank No.	Life events	Mean Stress Score
29.	Family conflict	47
30.	Break-up with friend	47
31.	Major purchase or construction of house	46
32.	Death of pet	44
33.	Failure in examination	43
34.	Appearing for an examination of interview	43
35.	Getting married or engaged	43
36.	Trouble with neighbour	40
37.	Unfulfilled commitments	40
38.	Change in residence	39
39.	Change or expansion of business	37
40.	Outstanding personal achievement	37
41.	Begin or end schooling	36
42.	Retirement	35
43.	Change in working conditions or transfer	33
44.	Change in sleeping habits	33
45.	Birth of daughter	30
46.	Gain of new family member	30
47.	Reduction in number of family functions	29
48.	Change in social activities	28
49.	Change in eating habit	27
50.	Wife begins or stops work	25
51.	Going on pleasure trip or pilgrimage	20

acceptable and easy in administration and is less threatening to subjects.

Here again, as evident in Table 5, no significant differences were observed in the reported stress in different age groups ($t=0.07$), marital state ($t=0.87$) and educated and illiterate groups ($t=0.35$).

TABLE 5 Mean weighted stress scores

Age	Mean weighted stress scores
35 years	45.35
35 years+	45.12
	$t=0.07, N. S.$
<i>Education</i>	
6th st.	44.28
6th st. +	45.49
	$t=0.35, N. S.$
<i>Maritals Status</i>	
Single	41.56
Married	37.41
	$t=0.87, N. S.$
<i>Desirable Vs Undesirable</i>	
Desirable	39.70
Vs Undesirable	56.71
	$t=3.75, p<0.01$
<i>Personal Vs Impersonal</i>	
Personal	47.08
Vs Impersonal	50.96
	$t=0.89, N. S.$
<i>High neuroticism Vs Low neuroticism</i>	
High neuroticism 9+(Mean 15)	55.30
Vs Low neuroticism 9 (Mean 4.26)	40.00
	$t=2.78, p<0.01$
<i>Experienced Vs Imaginary</i>	
Experienced	45.01±12.43
Vs Imaginary	48.36±16.70
	$t=0.04, N. S.$

However, as shown in Table 6, there were marked sex differences in the way certain items were perceived by males and females respectively. Some events e. g. death of friend, sexual difficulties and retirement were perceived to be more stressful by men while other items e. g. death of close family member, family conflict and gain of new family member by women. However, differences reached significant level only for three items i. e. death of family member ($p<0.05$), family conflict ($p<0.01$), gain of new family member ($p<0.01$), all of which were felt to be more stressful by women than men.

TABLE 6 *Sex differences on specific items*

	Males	Females	
1. Death of family member	53.68	78.21	$t=2.29, p<0.05$
2. Family conflict	35.74	55.50	$t=2.71, p<0.01$
3. Gain of new family member	17.50	47.00	$t=3.17, p<0.01$
4. Retirement	43.21	27.33	$t=1.15, N. S.$
5. Sexual difficulties	66.42	44.71	$t=1.72, N. S.$
6. Death of friend	71.78	55.26	$t=1.77, N. S.$

Interestingly, all these items are related to interfamily events, perhaps this may be explained by the fact that in Indian culture majority of women are still closely bound to family with few outside professional and social interests. We have given weighed scores on these three items separately (Table 6) for males and females and this would be important to keep in mind if the study sample consists of larger number of males or females compared to control group.

Similar caution should be observed when studying neurotic sample e. g. patients of anxiety, reactive depression and hysteria etc., since we have demonstrated (in Table 5) that even normal subjects with high "N" score report a significantly greater amount of subjective stress, than normal controls with low "N" score ($p<0.01$). It would be expected then, that neurotics would get a higher number of stress scores for the same stress event than the normal controls. This should not hold true, however, in the case of psychotic subjects prior to their break down. Work of Cooper and Sylph (1977) suggests that serious threatening

events play a major etiological role in neurotic disorder. Brown *et al.* (1973) suggests that life events for depression appear to have a "formative effect" while for schizophrenia their impact is more that of a "triggering effect".

Finally, in view of the reported finding that recall of events in recent time period is better than relatively remote events (Jenkins *et al.* 1979) and other problems of retrospective contamination (Brown, 1974), it was decided to keep two time scales; (a) life time and (b) past one year. Time scale of one year as opposed to six months is also suggested in studies of Paykel *et al.* (1969), Jacob *et al.* (1974) and is supported by Jacob and Myers (1976).

CONCLUSIONS

Norms obtained from present study for adult Indian population suggests that an average individual experiences an average of ten common stressful events in a life time without suffering any obvious adverse physical or psychological disturbance. Similarly mean number of stressful life events experienced in a year is approximately two.

No significant differences were observed in the quantum of subjective distress experienced in response to specific life events by the subjects in different age groups, marital status and educational level. However, marked sex differences were observed on three of the items, females perceived these events as significantly more stressful than males (Differential stress scores on these events were worked out separately, details are given in the monograph).

Our findings that subject with high N-score report greater amount of subjective stress suggests that neurotic patients would be likely to report higher number of experienced life events as well as significantly higher stress scores for same stress event than the

normals. This requires further study on sample of different psychiatric illnesses.

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