

The Relationships of Paranormal Beliefs and Locus of Control among Students of Medical College, Delhi

Sujata Gupta¹, Neha Taneja², Nidhi Dwivedi³, Sandeep Sachdeva⁴

¹DNB community medicine, Epidemiologist cum AP, Dept of Community medicine, GMC Kathua, J&K, ²DNB community medicine, PhD scholar, Laboratory of Disease Dynamics and Molecular Health, Amity Institute of Public Health, Amity University Noida, ³Ph.D. Statistics, Assistant Professor, North DMC Medical College, Hindu Rao Hospital, Delhi, ⁴MD, DNB Community Medicine.

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Abstract

Background: The phenomenon of Paranormal beliefs has puzzled scientific community. Studies on this subject have been hindered by conceptual and methodological issues. There is little evidences found between locus of control and paranormal. This constituted rationale of current study. We studied relationships between paranormal beliefs, as measured by Paranormal Belief Scale (Tobacyk& Milford, 1983) and locus of control as measured by ROT-IE scale among medical students of Delhi.

Methodology: The study population consists of medical undergraduate students in Delhi who were enrolled at college during the time of the study. All undergraduate students who gave consent were included in study. A pre-tested and predesigned questionnaire asking their socio-demographic information and relationship between their sense of personal control(locus of control measured by the ROT-IE scale) and paranormal beliefs(using revised form of the Paranormal Belief Scale) was administered. Chi-square test and Pearson's correlation test were used to test significance

Results: Means and standard deviations for the PBS-R and the IELOC Scales were reported separately for socio-demographic parameters. Females scored higher than males on all subscale except extraordinary life forms and precognition but it was statistically significant. Bi-variate correlation between locus of control and revised paranormal belief scale revealed that as persons tend towards internal locus of control, their paranormal belief become low.

Conclusion: In our study it was shown that there was significant relationships among paranormal beliefs and locus of control.

Key words: Locus of control, paranormal beliefs, medical students, India

Introduction

The term paranormal is used to describe phenomena, which violate basic limiting principles

of science. Paranormal belief can be defined as, "a proposition that has not been empirically attested to the satisfaction of the scientific establishment but

Corresponding Author: Nidhi Dwivedi. Department of Community Medicine, North DMC Medical College, Hindu Rao Hospital Delhi.

E-mail: nidhi.stats@gmail.com

Mobile: 9599242584

is generated within the non-scientific community and extensively endorsed by people who might normally be expected by their society to be capable of rational thought and reality testing¹. Tobacyk and Milford (1983) identified seven relatively independent dimensions of paranormal belief (traditional religious beliefs, psi beliefs, witchcraft, superstition, spiritualism, extraordinary life forms, and precognition) and constructed a Paranormal Belief Scale which provides a separate score for degree of belief in each of these seven dimensions². Early studies into paranormal beliefs rendered most negative view on believers, emphasising deficiencies in intelligence, education and personality. However, these early studies tended to focus on simple superstitions compared with the recent research focus on more complex and sophisticated phenomena such as psychokinesis and precognition³.

Two areas that have received a lot of attention in relation to paranormal beliefs have been locus of control and psychopathology^{4,5}. The connection between paranormal beliefs and feelings of control were proposed as far back as the 1940's by Malinowski (1948), with these beliefs serving as a kind of illusion of control. (Langer, 1975)⁶.

Early research had shown that there was a relationship between more external locus of control and greater belief in paranormal phenomena. On one hand in uninvolved and uncommitted college students greater belief in the paranormal was related to external locus of control whereas in actively involved students such as readers of psychic books greater belief in the paranormal was related to internal locus of control¹.

Paranormal beliefs are fascinating phenomena. As this phenomenon has puzzled the scientific community, investigation of individual differences in the belief in the paranormal has been a prominent avenue to inquire. Studies on this subject have been hindered by conceptual and methodological issues, making the available findings for most part uninterpretable and inconclusive. Also little evidences are found about the possible relationships between locus of control and paranormal beliefs in medical college students and this constituted the rationale of the current study.

We studied relationships between paranormal beliefs, as measured by Paranormal Belief Scale (Tobacyk & Milford, 1983) and locus of control as measured by the ROT-IE scale (7,8). The goal of this study was to assess relationship between locus of control and the belief in paranormal of students of a medical college.

Material and Methods

Participants: The study population consists of all medical undergraduate students in Delhi who were enrolled at college during time of study August to September 2020 from first to final year.

Methodology

The study was conducted in classroom settings. Subjects were approached at beginning of class and asked to participate in study. Participation was voluntary, and subjects willing to participate were given enough time to fill the forms. They were instructed to read directions of each scale carefully and respond to all items anonymously and to seek assistance if necessary.

Study tool

After obtaining ethical committee approval, study recruited students who were willing to participate. After obtaining written informed consent from all participants a pre-tested and predesigned questionnaire consisting of socio-demographic information, their astrological and paranormal beliefs was administered. The participants were administered revised form of Paranormal Belief Scale and Internal- External Locus of Control Scale.

Revised Paranormal Belief Scale (RPBS) by Tobacyk (1988) was used to study their paranormal beliefs. It is a 26-item scale which provides a result on seven dimensions of paranormal beliefs: Traditional religious belief, Psi, Witchcraft, Superstition, Spiritualism, Extraordinary life forms and Precognition. The responses are scored on a seven-point Likert scale. Higher rating indicates stronger endorsement on all but one item from the Psi subscale (question 23) which in turn needs to be negatively scored. The sum of all items is indicative of a general tendency to adopt paranormal belief, while subscales can be used to measure specific dimensions of paranormal belief⁷.

The locus of control scale consists of degree to which people report a sense of personal control in daily experiences. It is a 20 item questionnaire to measure extent to which individuals believe they have ability to control what happens to them (internal) or how much they think that forces beyond their control affect their situation (external). Thus, individuals with an internal locus of control believed that events are product of their own behaviors, while individuals with an external locus of control believed that events are product of chance, luck, or influence of other people⁸.

Results

A cross-sectional study was conducted among 179 students in a Government Medical College, located in New Delhi to assess relationship between locus of control and their belief in paranormal events.

Of total 179 students, there were 57(31.8%) females and 122(68.2%) males in the study with mean age of 20.23(+/- 1.65).Majority of participants belong to Hindu religion 169(94%) and general category(61.6%),133(74.4%) fathers of respondent have at least college education while 112(62.7%) mothers of participants had college education. Majority were from nuclear family 132 (73.3%).

When asked about their belief in science of astrology,77 % of students didn't believe in astrology and 77.8% didn't think that it has scientific basis. About 84% of student thought that education of a person has nothing to do their belief in astrology and 90.2% believed that financial status also has no impact on their astrology belief.

Means and standard deviations for PBS-R and IELOC Scales were reported separately for gender, caste, religion, nativity (urban, rural), education of parents and family type. Females scored higher than males on all subscale except extraordinary life forms and precognition but it was statistically significant. Education of father was significantly associated with Traditional religious beliefs, Psi and Precognition. Education of mother was significantly associated with Psi and Precognition. Religion was significantly associated with Extra ordinary life forms and caste of participants as significantly associated with witch craft.

On showing relation between locus of control scoring with respect to socio demographic characters like gender, caste, religion, parents education, family type (nuclear or joint) and nativity (Urban or rural)it was reported that no participant showed very strong and any external locus of control with any socio demographic variables. There were 53 participants who showed both external and internal locus of control with variables while there were 104 and 27 participants that reported internal locus and very strong internal locus with socio demographic characters respectively .Females were having higher scores than males .Participants of general category were having lower score than other categories participants .Hindu religion subjects were having higher scores than subjects of other religion. Subjects with father having school education have higher score and mother with no education have higher locus score. Participants belonging to joint family and those living in urban area were having higher scores,

Table 1: Intercor relations of revised paranormal belief scale \scores

	Traditional Religious Belief	Psi	Witch-Craft	Superstition	Spiritualism	Extra Ordinary Life forms	Precognition
Traditional Religious Belief	1	0.22(0.003)	0.49 (0.000)	0.24 (0.001)	0.45 (0.000)	0.27 (0.000)	0.38 (0.000)
Psi		1	0.52 (0.000)	0.18 (0.016)	0.47 (0.000)	0.28 (0.000)	0.41 (0.000)
Witch-Craft			1	0.29 (0.000)	0.59 (0.000)	0.36 (0.000)	0.54 (0.000)
Superstition				1	0.22 (0.003)	0.59 (0.036)	0.25 (0.001)
Spiritualism					1	0.47 (0.000)	0.55 (0.000)
Extra Ordinary Life forms							0.26 (0.000)
Precognition							1

To examine the relationships among paranormal beliefs scores intercorrelations among global and subscale scores of related devices were computed by Pearson correlation technique. As seen in table 1 there is significant correlation between all variables to each other.

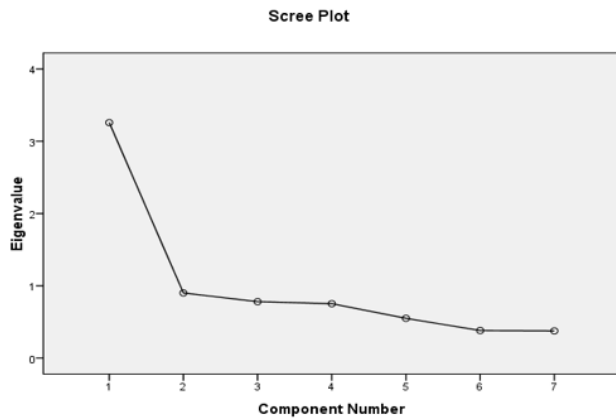


Fig1: Figure showing component correlation of PBS-R

We have tested component correlation of PBS-R by Bartlett’s of sphericity which comes out to be 348.8(0.000) which indicated that correlation is highly significant among the components. So we can apply factor analysis. After applying factor analysis i.e. principal component analysis to PBS-R item extracted 1 factor at default which is explaining total 47% of variance .Since there is only 1 component extracted we can’t apply rotation rotation method.

Reliabilities and factorial validities

Internal consistencies “Cronbach a” of the PBS-R and IELOC Scales were 0.811 and 0.376 respectively and the split-half “Spearman-Brown reliabilities were 0.780 and 0.717 respectively.

Table 2: Table showing bivariate correlation between locus of control and revised paranormal belief scale

PBS-R	Traditional Religious Belief	Psi	Witch-Craft	Superstition	Spiritualism	Extra Ordinary Life forms	Precognition
Locus of control	-0.007 (0.92)	0.003 (0.96)	-0.127 (0.09)	-0.183* (0.01)	-0.191* (0.01)	0.123 (0.10)	-0.144 (0.05)

Table 2 shows bi variate correlation between locus of control and revised paranormal belief scale revealed that as persons tend towards internal locus of control, their paranormal belief become low. Superstition and spiritualism were significantly correlated with internal locus of control.

Discussion

The study was conducted among medical students to find the relationship between their paranormal beliefs and locus of control. Education of father was significantly associated with Traditional religious beliefs, Psi and Precognition. Education of mother was significantly associated with Psi and Precognition. Religion was significantly associated with Extra-ordinary life forms and caste of participants as significantly associated with witch craft.

The internal consistencies and other reliability indices of PBS-R and IELOC Scales were sufficiently high for specific sample as we get “Cronbach alpha” of the PBS-R and IELOC Scales were 0.811 and 0.376

respectively and the split-half “Spearman-Brown reliabilities were 0.780 and 0.717.

In our study females scored higher than males on all subscale except extraordinary life forms and precognition but it was statistically significant. In similar study conducted in Turkish females scored significantly higher than males on the Superstition subscale, and males scored significantly higher than females on the Extraordinary Life Forms subscale¹. They are higher among women than men and it was supposed that the difference is due to women’s richer fantasy life .Tobacyk and Milford reported higher scores of females on Traditional Religious Belief and Precognition in a USA sample which were dissimilar to the present results but reported more beliefs in Extraordinary Life Forms among males, which was similar to the present results². Moreover Wolfradt reported higher scores of females subscale scores except Traditional Religious Belief and Extraordinary Life Forms in a German sample⁹.

The major point of our study was to find out relationship between paranormal beliefs and locus of control. Related to this aim, inter correlations among scales and subscales were computed. Bivariate correlation between locus of control and revised paranormal belief scale revealed that as persons tend towards internal locus of control, their paranormal belief become low. Superstition and spiritualism were significantly correlated with locus of control. As seen in Table 4, small but significant correlations between the global scores of the PBS-R and the IELOC Scales were found as expected. These findings supported previous research reporting correlations between paranormal beliefs and locus of control (Tobacyk & Milford, 1983; Scheidt, 1973)^{2,10}. Upon suggestions of previous researchers (Davies & Kirkby, 1985; Tobacyk et al., 1988) about utility of multidimensional conceptualization, inter correlations among the subscales of the PBS-R and IELOC Scales were examined^{5,10}. All paranormal subscales were significantly correlated with global locus of control. Tobacyk and Milford (1983) reported a significant correlation only between Extraordinary Life Forms and locus of control. There were significant positive inter correlations among subscales of the two scales². Traditional Religious Belief and Witchcraft with Unjust World, Personal Control, Chance and Fate; Precognition and Psi and Superstition with all subscales except Interpersonal Control; Spiritualism with Chance and fate; Extraordinary Life Forms with Chance and fate, and Control in Achievement Situations (Table 2) These findings were not comparable with Davies & Kirkby (1985) and Tobacyk et al's (1988) studies because they used Sphere of Control Scale to measure locus of control^{5,11}.

Limitation: Our study was done among medical students of a metro city of a lower middle income country. But there is a need for further research that can focus on finding relation between paranormal beliefs and personality of non-medical as well as medical students of second and third tier cities.

Conclusion

In the present study it was shown that there were significant relationships among paranormal beliefs and locus of control in an Indian medical students. It was also shown that there were differential

relationships among the various dimensions depending on factor analyses of paranormal beliefs and locus of control scales and between those dimensions.

However, there is a need for further researches following on these preliminary results that focus on those multidimensional relationships more closely with more improved measurement devices with balanced samples of genders and other than college students. Moreover if there is a relationship between having paranormal beliefs and an external locus of control in real life behind those low level correlations or in other words if there is real significance behind those statistical significances this should be reconsidered in light of the preliminary impressions held by Snyder stated in special issue of Journal of Social and Clinical Psychology¹².

Bizarre behavior often reflects the inability of people to meet their needs such as to be protected attended listened to and being in connection with others. Finally an early and perhaps immature speculation might be such that persons who have an external locus of control based on their history of reinforcement or have a less perceived control may attempt to gain some kind of control over their lives by having bizarre behavior and/or complementary paranormal beliefs in absence of normal or adaptive means of control but with a cost that makes them appear psychopathological.

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Conflicts of interest There are no conflicts of interest

References

1. Dag, I. The relationships among paranormal beliefs, locus of control and psychopathology in a Turkish college sample. *Personality and Individual Differences*, 1999, 26, 723-737.
2. Tobacyk, J, Milford, G. Belief in paranormal phenomena. Assessment instrument development and implications for personality functioning; *Journal of Personality and Social Psychology*, 1983, 44;1029-1037
3. Branković M. Who Believes in ESP: Cognitive and Motivational Determinants of the Belief in Extra-Sensory Perception. *Eur J Psychol.* 2019 Feb 28;15(1):120-139.

4. Dagnall, N., Denovan, A., Drinkwater, K. G., & Escolà-Gascón, Á. . Paranormal belief and well-being: The moderating roles of transliminality and psychopathology-related facets. *Frontiers in psychology*, 2022, 13, 915860.1-12
5. Davies, Martin F. and Hillary E. Kirkby. "Multidimensionality of the relationship between perceived control and belief in the paranormal: spheres of control and types of paranormal phenomena." *Personality and Individual Differences* , 1985, 661-663.
6. Langer, E.J. The illusion of control. *Journal of Personality and Social Psychology*; 1975, 32(2), 311-328
7. Tobacyk, J. J. A revised paranormal belief scale. *International Journal of Transpersonal Studies*,2004, 23(1), 94-98.
8. Rotter, J. B. Generalized expectancies for internal versus external control of reinforcement. *Psychological Monographs: General and Applied*, 1966, 80(1), 1-28.
9. Wolfradt,U, Dissociative experiences, trait anxiety and paranormal beliefs;*Personality and Individual Differences*, 1997,23,15-19
10. Scheidt. R. J. Belief in supernatural phenomena and locus of control;*Psychological Reports*, 1973, 32,1159-1162.
11. Tobacyk. J.J et al. Paranormal beliefs in late adulthood;*Psychological Reports*; 1988, 63,965-66
12. Snyder, C. R., & McCullough, M. E. A positive psychology field of dreams: "If you build it, they will come..." *Journal of Social and Clinical Psychology*, 2000, 19(1), 151-160.