Vol. 13, Issue: 05, May: 2024
ISSN: (P) 2347-5412 ISSN: (O) 2320-091X

Mental Health in Relation to Spiritual Intelligence, Altruism, School Environment and Academic Achievement of Senior Secondary Students

MD RAHAM ALI
Research Scholar,
Department of Education, Meerut College,
Meerut (U.P.)

DR. SANJAY KUMAR
Professor,
Department of Education, Meerut College,
Meerut (U.P.)

Abstract:
The present study was delimited to students of 10+1 class studying in Government, Aided and Unaided schools of Jalandhar district affiliated to Punjab School Education Board, Mohali.

1. Introduction

The problem of promoting Mental Health in the educational context in a developing country like India, occupies high priority on the agenda for human development. In particular, attaining the goal of Mental Health for all is critically related to planning and implementation of educational programmes. Also, pursuing education and attaining its goals requires achieving an optimally minimum level of health for the learners and teachers. Any disturbance in this process is likely to create risks and health hazards. Although, theoretically, Indian education system aims at optimum development of Mental Health of students and teachers, but on practical side the huge curriculum, theoretical work, un-psychological methods of teaching, improper school environment, unhealthy stress for academic achievement by schools, stress given by family and social environments are the obstacles or contrary in accordance with aims of education.

The Encyclopedia of Education (Deighton, 1971) emphasized Mental Health has more than simply the absence of mental illness. Rather Mental Health is seen as the optimal functioning of the individual and social group in all emotional and intellectual areas. Physical component of the well-being has been stressed by Maes et al. (1989) and Bryant et al. (1983) as a part of general well-being. According to World Health Organization (WHO) (2006) the state of health is defined as a state of complete physical, mental and social well-being and not merely „an absence of disease" or infirmity. WHO also suggested a fourth dimension i.e. spiritual well-being" (Kapur, 1995). Hence, theoretically, correlation between Mental Health and Spiritual Intelligence exists, but empirically hardly any research has been conducted for the same. Indirectly, Sobel (1997) indicated some evidence of a linear relationship between scores of the Spiritual Perspective Scale and the index of well-being. Few empirical researches have been conducted on Spiritual Intelligence as by Kaur (2004), Sisk (2008), Hyde (2008), Luckcock (2008), and Singh (2008), but out of these, no study was related with Mental Health of adolescents in local conditions.

On the basis of previously conducted researches, the investigator found the importance of variables closely related to spirituality in human life. Albert (2005) explained that spiritual development, marked by acceptance, purpose, connectedness, and transcendence, was the primary measure of growth. Results highlighted the importance of developing people's ruminative capacity (sense of awareness) as well as accepting the interplay of unitive and destructive forces in the web of existence and therefore, in the human experience. Matlock-Hetzel (2004) concluded that individuals who perceive God as present, benevolent, and loving have more positive attitudes towards seeking professional help.

Vol. 13, Issue: 05, May: 2024
ISSN: (P) 2347-5412 ISSN: (O) 2320-091X

Individuals who report higher degrees of intrinsic religiosity also indicated more positive attitudes toward counselling. A large number of researches provide evidences regarding importance of spirituality for human beings in general. Zimmer (1994) revealed that a spiritual calling had significant relationships to very meaningful attractive qualities in a teacher's personal attitude towards teaching career. Goudy (1998) reported significant negative correlation between emotional eating and spiritual health. Lips-Wiersma (1999) found that spiritual belief strongly determined careers choice, transition, and experience. Renteria (2001) confirmed effectiveness of teaching of public-school teachers from their spirituality. Van (2006) suggested that success was more than teaching to the intelligence quotient (IQ) and emotional quotient (EQ), but we also must attend to the soul quotient (SQ).

Vaughan (2002) suggested that Spiritual Intelligence was necessary for discernment in making spiritual choices that contribute to psychological well-being and overall healthy human development. Again, these findings and relations directed the investigator to select Spiritual Intelligence as a variable in the present study. Finding this gap of relationship between Spiritual Intelligence and Mental Health, the investigator selected these variables in present study.

Throughout history, many social psychologists have been interested in the study of prosocial behavior and in particular, understanding the underlying factors that contribute to these voluntary actions carried out for the benefit of others. Many researchers have examined the concept of Altruism and suggested a number of variables influencing the occurrence of altruistic behavior such as Mood (Khanna et al., 1992), locus of control (Sharman et al., 1992), empathy (Khanna, 1991), gender (Khanna et al.,1992; Jha et al., 1997). Levine (1983) provided weak support for the notion that moods can affect helping, but no support for the notion that helping relieves negative mood states. Batson (1989) illustrated that giving help to others was most significantly associated with Mental Health than receiving help. Miller (1977) suggested complex relationships among dependency, empathy and Altruism. Hoffman (1978) explored the case for viewing Altruism as an inherent part of human nature. Underwood (1982) concluded that there were reliable relationships between Altruism and perceptual, social, and moral perspective taking. Results concerning the relationship between empathy and Altruism were non-significant overall, but it was suggested that a reliable association between empathy and Altruism develops over time and was found in adults. Lourenco (1990) found that older children were more likely to consider an altruistic act in terms of gain construction than cost perception. Kakavoulis (1998) found that children behave altruistically almost from birth, with a great variety of this feeling from 2-4 years old, mostly expressed towards loved persons and with no gender differences. Panofsky (1976) found that similarity/dissimilarity of race did not significantly affect subjects' empathic, sharing, or helping behaviour. On the other hand, similarity of interests did affect subjects' empathic and sharing behaviour. On the whole, there was hardly any study which examined relationship between Mental Health and Altruism of adolescents. That is why, Altruism was taken as a variable in the present study.

The students come to the educational institutions with certain explicit and implicit expectations from the school and schooling, and are endowed with certain characteristics at the point of entry. School environment, the personality makeup, and other dispositions (e.g. attributes, interests, and abilities), assets and the liabilities of learner prefer him or her uniquely to interact with the school in healthy and productive or unhealthy and destructive ways. Considerable individual differences do exist in these characteristics. A study by Verma et al. (1990) divulged that the academic stress among adolescents was caused chiefly by the examination system, the burden of homework, and the attitudes of the parents and teachers. Their stress symptoms encompassed all the three areas i.e. physiological, psychological and behavioural.

Few researchers examined school environment extensively and reported the significance of same. Martin et al. (2008) reported that adolescents spend a large proportion of their day in school or pursuing school-related activities. While the primary purpose of school was the academic development

of students, its effects on adolescents were far broader, also encompassing their physical and mental health, safety, civic engagement, and social development. Further, its effects on all these outcomes were produced through a variety of activities including formal pedagogy, after-school programs, caretaking activities (e.g., feeding, providing a safe environment) as well as the informal social environment created by students and staff on a daily basis. Research has repeatedly demonstrated the interconnectedness of the pieces, with safety and health affecting the academic environment, academics affecting health and social development, and so on. For that reason, any particular aspect of school policy and activities will be better understood through the lens of that larger context. This was particularly important as school systems have become even more pressured to focus on their main goal of academic development as a result of the federal no child left behind initiative.

Study of researches on school environment revealed that this variable (SE) was assessed in different manners by researchers, but mostly it was assessed as perception of students. Bullerdick (2000) reported that school connectedness contributed the greatest to emotional well-being among Indian youth. Reddy et al. (2002) found that the students of co- educational schools were well adjusted when compared to the students of non-co-educational schools i.e. the School Environment was enhancing Mental Health in case of co-educational but not in the non-co-educational schools. Manjuvani (1990) reported that the School Environment contributed to liabilities and Mental Health index. Chahal (2005) revealed that perceived social support from classmates, teachers, and parents predicted high well-being in adolescents. Ghanihar (2005) revealed that the students of high effective schools were more adjusted to schools than the students of average and low effective schools. Students of high effective schools were involved more in schools activities than the students of average and low effective schools. Hence, literature revealed that type and nature of School Environment influences more or some aspect of Mental Health. Finding gap in studies with School Environment (especially with dimension of School Environment) and Mental Health, the investigator selected these variables for examination.

Academic achievement is major educational variable of Indian secondary education. Large number of studies have been conducted on relationship of academic achievement and Mental Health or academic achievement and various aspect of Mental Health. Majority of studies reported that Mental Health was positively and significantly correlated with academic achievement of senior secondary students such as Magotra (1982), Anand (1989), Devi (1993), Bhalerao et al. (2008), Prasanna et al. (1981), Abraham (1984), Arjunan (1994),

Perumal (2008), Bhurwani (1991), Kaur (1982), Sharma (1984), and Van (2006). Mental health included intelligence which was positively and significantly correlated with academic achievement as Panigrahi (2005) found that there was significant and positive correlation between academic achievement and intelligence; high intelligence lead to better academic success; a low positive correlation between academic achievement and socio-economic status. Hence, literature presented that much research work has been done on Mental Health but there was dearth of studies which examine the academic achievement and Mental Health in relation to Spiritual Intelligence, Altruism and School Environment. Thus, Academic Achievement was taken as an major educational variable.

Behavior of learner is complex and influenced by many internal and external variables. That is why, a comprehensive title was designed as „Mental Health in relation to Spiritual Intelligence, Altruism, School Environment and Academic Achievement of Senior Secondary Students".

Further, literature revealed that gender, location, and type of school influences psycho-educational variables under examination in the present study. Gupta (2002), Shakunthala (2001), Accordino et al. (2000), Devi (1993), Goins (1997), Bhogle et al. (1990), Kumar et al. (1993), Reddy et al. (1993), Crews (2005), and Orellana (2004) reported significant gender difference in Mental Health. Kang (2000) and Moree (1998) reported that gender was significant in determining spiritual well-being.

Vol. 13, Issue: 05, May: 2024
ISSN: (P) 2347-5412 ISSN: (O) 2320-091X

Similar results were given by Dillman (1999), Krishnan (1981), Ma (1999a), Wiley (2006), Hermann (1997), and Long et al. (1988). Nearly every one of the researchers reported gender difference in Altruism such as Komila (1994), Anderson (1993), Payne (1975), Kumari (2008), Mills et al. (1989), Miller (1977), Panofsky (1976), Russell et al. (1985), and Gairola et al. (2004). Studies conducted by Cornvelivs et al. (1988), Lalithamma (1995), Vamadevappa (2005), Bajwa et al. (2006), Aruna et al. (2009), Meera et al. (2008), Pannu (2010), and Rangappa (1992) reported significant differences in academic achievement between the boys and girls.

Significant influence of location on Mental Health was found in many studies such as Kumar et al. (2005), Carlin (1999), and Andrews et al. (1974). Influence of location on academic achievement was reported by Dwivedi (2005), Pannu (2010), Rangappa (1992), Suresh (2007), Rajmal et al. (1995), Joshi (2009), Khatoon (2003), and Adeniyi et al. (2008). Almost no study was found, which studies Spiritual Intelligence and Altruism with regards to location of senior secondary students.

Few studies reported significant influence of types of schools on academic achievement without any direction such as Srivastava et al. (2004), Panda (2005), and Allen (1992). Further, general experience and observations of the investigator advocate that type of school climate varies with type of school (government, aided and unaided) on different psychological, physical and academic aspects. For example, physical facilities are better in private schools than government schools. In the same way, difference between psychological and academic environments exists among schools. These differences are also found when we compare rural and urban School Environment in Punjab. Thus, experience of investigator, the observations of previous researches and for in-depth examination of relationships, differences, interactions and differences in relationships of predictor and criterion variables, gender, location, and type of school were taken as classifying as well as moderator variables. On the basis of above discussion, the present study was designed with Mental Health as criterion variable and Spiritual Intelligence, Altruism, School Environment and academic achievement as predictor variables.

The present research work is significant as it may provide some base for further surveys and experimental researches by presenting a number of relationships (correlates) with psychological, educational and demographic variables. These findings may help an (future) experimenter to select dependent variables, independent variables, intervening, and controlling variables as well as to form hypotheses. Further, this work may contribute of generalisation about these selected variables.

2. Objectives

Following were the objectives of the study.

1. To cross validate Mental Health Battery and Altruism Scale in Hindi and Spiritual Intelligence Scale and School Environment Inventory in Punjabi language for Senior Secondary Students of Jalandhar district.
2. To analyse Mental Health (Total and dimension wise), Spiritual Intelligence, Altruism and Academic Achievement of Senior Secondary Students.
3. To compare Mental Health, Spiritual Intelligence, Altruism and Academic Achievement on the basis of Gender of Senior Secondary Students.
4. To compare Mental Health, Spiritual Intelligence, Altruism, School Environment (dimension wise) and Academic Achievement on the basis of Location of Senior Secondary Students.
5. To compare Mental Health, Spiritual Intelligence, Altruism, School Environment (dimension wise) and Academic Achievement on the basis of Type of School of Senior Secondary Students.
6. To compare Mental Health on the basis of different levels of Spiritual Intelligence, Altruism, School Environment (dimension wise) and Academic Achievement of Senior Secondary Students.
7. To study the influence of interaction between Gender and Spiritual Intelligence; Gender and Altruism; Gender and School Environment (dimension wise); and Gender and Academic Achievement on Mental Health of Senior Secondary Students.
8. To study the influence of interaction between Location and Spiritual Intelligence; Location and

Vol. 13, Issue: 05, May: 2024
ISSN: (P) 2347-5412 ISSN: (O) 2320-091X

Altruism; Location and School Environment (dimension wise); and Location and Academic Achievement on Mental Health of Senior Secondary Students.

9. To study the influence of interaction between Type of School and Spiritual Intelligence; Type of School and Altruism; Type of School and School Environment (dimension wise); and Type of School and Academic Achievement on Mental Health of Senior Secondary Students.
10. To study the influence of interaction between Spiritual Intelligence, Altruism and Academic Achievement on Mental Health (total and dimension wise) of Senior Secondary Students.
11. To find out correlation between Mental Health and Spiritual Intelligence; Mental Health and Altruism; Mental Health and School Environment (dimension wise); and Mental Health and Academic Achievement of Senior Secondary Students.
12. To find out Gender difference in correlations between Mental Health and Spiritual Intelligence; Mental Health and Altruism; Mental Health and School Environment (dimension wise); and Mental Health and Academic Achievement of Senior Secondary Students.
13. To find out difference in correlations between Mental Health and Spiritual Intelligence; Mental Health and Altruism; Mental Health and School Environment (dimension wise); and Mental Health and Academic Achievement on the basis of Location of Senior Secondary Students.
14. To find out difference in correlations between Mental Health and Spiritual Intelligence; Mental Health and Altruism; Mental Health and School Environment (dimension wise); and Mental Health and Academic Achievement on the basis of Type of School of Senior Secondary Students.
15. To find out correlations between Mental Health and Spiritual Intelligence; Mental Health and Altruism; Mental Health and School Environment (dimension wise); Mental Health and Academic Achievement by controlling Spiritual Intelligence, Altruism, dimensions of School Environment and Academic Achievement of Senior Secondary Students individually.
16. To study the joint contribution of Spiritual Intelligence, Altruism, School Environment (dimension wise) and Academic Achievement in predicting Mental Health of Senior Secondary Students.
17. To establish regression equation for predicting Mental Health on the basis of Gender, Location, Type of School, Spiritual Intelligence, Altruism, School Environment (dimension wise) and Academic Achievement of Senior Secondary Students.
18. To study the factor structure of Mental Health (dimension wise), Spiritual Intelligence, Altruism, School Environment (dimension wise) and Academic Achievement of Senior Secondary Students.
19. To study the paths of relationships between Mental Health, Spiritual Intelligence, Altruism, dimensions of School Environment and Academic Achievement of Senior Secondary Students.

3. Hypotheses

Following were the hypotheses of the study.

1. There is no significant Gender difference in Mental Health; Spiritual Intelligence; Altruism; and Academic Achievement of Senior Secondary Students.
2. There is no significant difference in Mental Health; Spiritual Intelligence; Altruism; School Environment (dimension wise); and Academic Achievement on the basis of Location of Senior Secondary Students.
3. There is no significant difference in Mental Health; Spiritual Intelligence; Altruism; School Environment (dimension wise); and Academic Achievement on the basis of Type of School of Senior Secondary Students.
4. There is no significant difference in Mental Health on the basis of different levels of Spiritual Intelligence; Altruism; School Environment (dimension wise); and Academic Achievement of Senior Secondary Students.
5. There is no significant influence of interaction between Gender and Spiritual Intelligence; Gender and Altruism; Gender and School Environment (dimension wise); and Gender and Academic Achievement on Mental Health of Senior Secondary Students.

Vol. 13, Issue: 05, May: 2024
ISSN: (P) 2347-5412 ISSN: (O) 2320-091X

6. There is no significant influence of interaction between Location and Spiritual Intelligence; Location and Altruism; Location and School Environment (dimension wise); and Location and Academic Achievement on Mental Health of Senior Secondary Students.
7. There is no significant influence of interaction between Type of School and Spiritual Intelligence; Type of School and Altruism; Type of School and School Environment (dimension wise); and Type of School and Academic Achievement on Mental Health of Senior Secondary Students.
8. There is no significant influence of interaction of Spiritual Intelligence, Altruism and Academic Achievement on Mental Health (total and dimension wise) of Senior Secondary Students.
9. There is no significant correlation between Mental Health and Spiritual Intelligence; Mental Health and Altruism; Mental Health and School Environment (dimension wise); and Mental Health and Academic Achievement of Senior Secondary Students.
10. There is no significant Gender difference in correlations between Mental Health and Spiritual Intelligence; Mental Health and Altruism; Mental Health and School Environment (dimension wise); and Mental Health and Academic Achievement of Senior Secondary Students.
11. There is no significant difference in correlations between Mental Health and Spiritual Intelligence; Mental Health and Altruism; Mental Health and School Environment (dimension wise); and Mental Health and Academic Achievement on the basis of Location of Senior Secondary Students.
12. There is no significant difference in correlations between Mental Health and Spiritual Intelligence; Mental Health and Altruism; Mental Health and School Environment (dimension wise); and Mental Health and Academic Achievement on the basis of Type of School of Senior Secondary Students.
13. There is no significant correlation between
    a) Mental Health and Spiritual Intelligence of Senior Secondary Students when
    b) Altruism is controlled.
    c) Dimensions of School Environment are controlled individually.
    d) Academic Achievement is controlled.
    e) Mental Health and Altruism of Senior Secondary Students when
    f) Spiritual Intelligence is controlled.
    g) Dimensions of School Environment are controlled individually.
    h) Academic Achievement is controlled.
    i) Mental Health and dimensions of School Environment of Senior Secondary Students when
    j) Spiritual Intelligence is controlled.
    k) Altruism is controlled.
    l) Academic Achievement is controlled.
    m) Mental Health and Academic Achievement of Senior Secondary Students when
    n) Spiritual Intelligence is controlled.
    o) Altruism is controlled.
    p) Dimensions of School Environment are controlled individually.
14. There is no significant joint contribution of Spiritual Intelligence, Altruism, School Environment (dimension wise) and Academic Achievement in predicting Mental Health of Senior Secondary Students.

4. Sample

The present study was conducted on students of class 10+1 of senior secondary schools of Jalandhar district (Population). Students studying in schools affiliated to Punjab School Education Board, Mohali were taken for selecting the sample. Total 14 government, eight aided and five unaided schools were selected through stratified random technique. Further, students were raised by cluster sampling technique keeping in mind strata based on gender. Total 996 students were participants on which four tools were employed. Out of these 996 students, data of 62 students were not complete in one or more respects. Hence, these 62 students were not included in sample for analysis. Thus, sample comprised of 934 students. The structure of sample is given in table 1.

Vol. 13, Issue: 05, May: 2024
ISSN: (P) 2347-5412 ISSN: (O) 2320-091X

Table 1 Structure of Sample

Variable	Category	N
Gender	Boys	344
	Girls	590
Location	Urban	371
	Rural	563
Type of School (Number of Students)	Government	588
	Aided	227
	Unaided	119
Total		934

5. Method

Descriptive survey method was used in the present study.

6. Procedure

The data were collected in a set of three visits to each school selected in sample. The prior permission from the principals of the selected schools was taken. An intact class was taken for the data collection at a time. The instructions of the tool were made clear to the students. After that, the tool was administered on them according to the instructions given in the respective manual and the response-sheets were collected. The language of each tool was either Hindi or Punjabi. That is why, students faced almost no communication problem. Still communication problems/queries were resolved by the investigator faced by individual student. The same class was visited again on next day and the next tool was administered on them in the same way. The length (number of items) of Spiritual Intelligence Scale (47 items) and Altruism Scale (30 items) was relatively less than Mental Health Battery (130 items) and School Environment Inventory (70 items). That is why, Spiritual Intelligence Scale and Altruism Scale were employed consecutively in one (same) day, whereas Mental Health Battery and School Environment Inventory were employed single in one day. The same procedure was followed for all the tools in all the schools. Academic achievement of the students was taken from the scores of their matric class examination conducted by Punjab School Education Board, Mohali in March, 2007. The required information such as Matriculation roll number, marks obtained and maximum marks was taken from each student as well as from school authority. Sometimes, it happened that the school authorities did not have the results of the students. In such situations, the gazette published by Punjab School Education Board, Mohali (2007) was taken for noting marks and cross checking.

After collecting the required data from the students, scoring was done according to the instructions given in the manuals of respective tool (scale/inventory/battery). The basic information, the scores on each tool and marks of academic achievement were taken and given a tabular form. The table formed was then used for data analysis in the light of framed objectives.

7. Tools

The description of each tool used in the study is given below:

Mental Health Battery **(2000)** The battery was developed by Arun Kumar Singh and Alpana Sen Gupta. The battery covers six indices of Mental Health containing a total of 130 items. These indices are: Emotional Stability, Over-all Adjustment, Autonomy, Security- Insecurity, Self-Concept, and Intelligence (see Appendix B).

Instructions: Instructions for each dimension were separate and were printed just before the items for the concerned dimension starts. There was no fixed time limit for the first five parts.

However, generally a normal examinee took about 25 minutes in giving complete answers. Part VI was a speed test. The total allotted time for this part was 10 minutes.

Scoring: A scoring key was given in the manual. Each item was given one mark for right answer and zero for wrong answer. The scores of each dimension were added separately to have the dimensional scores and the sum of these scores gave the overall Mental Health scores.

Reliability: Both temporal stability and internal consistence reliability of Mental Health Battery were computed by the constructor of test. The detail is given in table 2.

Table 2 Reliability Coefficients of Mental Health Battery

S. No.	Dimension	Test-Retest Reliability	Odd-even Reliability
1	Emotional Stability	.876	.725
2	Over-all Adjustment	.821	.871
3	Autonomy	.767	.812
4	Security-Insecurity	.826	.829
5	Self-Concept	.786	.861
6	Intelligence	.823	.792

Validity: Mental Health Battery was validated against the different test developed earlier. Part I of Mental Health Battery was validated against Emotional Stability Test developed earlier by Sen Gupta and Singh (1985). Part II was validated against High School Adjustment Inventory (HSAI) developed earlier by Singh and Sen Gupta (1987) and Hindi adaptation of Bell‟s Adjustment Inventory by Mohsin, Shamshad and Jehan (1967). For Part III and Part V construct validity was computed. Part IV was validated against Neuroticism Scale of MPI as adapted by Jalota and Kapoor (1975). Likewise, Part VI was validated against Jalota Group General Mental Ability Test (1976). The detail is given in table 3.

Table 3 Validity Coefficients of Mental Health Battery

S. No.	Dimension	Concurrent Validity
1	Emotional Stability	.673
2	Over-all Adjustment	.704
3	Autonomy	.821
4	Security-Insecurity	.823
5	Self-Concept	.681
6	Intelligence	.601

Spiritual Intelligence Scale (2006) Spiritual Intelligence Scale, originally developed by Mr. Tirath Singh (2006), was adapted for the present study. The original scale contains 47 items. This scale was developed for graduate and post-graduate students. The scale has high reliability and validity as given below.

Reliability: The reliability of the scale was calculated by two different methods namely „test- retest‟ (after a period of four weeks) and „split-half method‟ by four different ways of splitting. The reliability coefficients are given in the Table 4.

Table 4 Method wise Reliability of the Spiritual Intelligence Scale

S. No.	Method	Interval/Type	N	Reliability Coefficient
1.	Test-Retest	After four weeks	61	.81
2.	Split-Half	Even-odd	102	.81
		1^{st} & 2^{nd} half	102	.78
		1^{st} 3^{rd} & 2^{nd} 4^{th} Quarters	102	.65
		1^{st} 4^{th} & 2^{nd} 3^{rd} Quarters	102	.77

Validity: Content validity and concurrent validity were established for the scale.

Content Validity: Only those items were included in the scale which got consensus of the judges. It was evident from the assessment of the judges that items of the scale were directly related to the construct of Spiritual Intelligence. It ensured that the scale had high content validity.

Concurrent Validity: The external criterion was used in order to establish validity i.e. Wolman's Psycho-Matrix Spirituality Inventory (2001). The validity coefficient (the correlation coefficient obtained between total scores on the present Spiritual Intelligence scale and Wolman's Psycho-Matrix

Vol. 13, Issue: 05, May: 2024
ISSN: (P) 2347-5412 ISSN: (O) 2320-091X

Spirituality Inventory obtained that was .69 (N=65).

Scoring: Scoring was done according to the marked ticks on the alternates. Four marks were assigned to Always, three to Mostly, two to Sometimes, one to Rarely and Zero to Never for positive items and reverse was done for negative items. The total scores were calculated by summing up the scores of each item. The total score gave the level of Spiritual Intelligence of the individual. Three levels (high, average and low) of Spiritual Intelligence were made on the basis of mean ± 1SD.

Altruism Scale (1988) The Altruism Scale was developed by Dr. S.N. Rai and Dr. Sanwat Singh in Hindi language with 30 items. Each item had three alternative responses altruistic, neutral and egoistic. A score of two for altruistic, one for neutral and zero for egoistic was awarded to each item in the scale. The maximum score was 60 and the minimum was zero. The reliability coefficient of the scale was .84 with reliability index of .92, which was statistically significant. The opinion of the experts was taken into consideration and that increased its content validity. The coefficient of correlation between the scores of teachers cum guardians and the scores of altruistic scale was .63 ($p < .01$). On the basis of raw scores five levels of Altruism were being classified for both boys and girls. They were „Very High", „High", „Moderate", „Low", and „Very low".

School Environment Inventory (1984) The inventory was developed by Dr. Karuna Shankar Misra. The inventory contains 70 items related to six dimensions of School Environment (i.e. concept intuitively judged) relevant to the social psychology of the classroom. These dimensions were Creative Stimulation, Cognitive Encouragement, Acceptance, Permissiveness, Rejection, and Control (see Appendix F). Each item has five alternates namely–Always, Often, Sometimes, Rarely and Never. Four marks were assigned to Always, three to Often, two to Sometimes, one to Rarely and Zero to never. The scores were calculated and interpreted separately for each of six dimensions.

There was no time limit for the inventory. The split half reliability coefficients for various dimensions of the School Environment are shown in table 5.

Table 5 Split-half Reliability Coefficients of School Environment Inventory

S. No.	Dimension	Reliability Coefficient
1	Creative Stimulation	.919
2	Cognitive Encouragement	.797
3	Acceptance	.823
4	Permissiveness	.673
5	Rejection	.781
6	Control	.762

School Environment Inventory had been found to possess content validity as measured with the help of views expressed by judges. Three levels (low, average, and high) of each dimension of School Environment Inventory were classified.

Academic Achievement Academic achievement of students was assessed by taking their marks gained by them in their matriculation examination conducted by Punjab School Education Board (Mohali) in March 2007. The obtained marks were converted into percentage marks in order to have a common scale for academic achievement. On the basis of percentage scores, three levels of academic achievement were made by using Mean ± 1 SD.

8. Cross Validation of Tools

8.1 Rationale for Cross Validation of Tools

There were some reasons for cross validation of tools used in the present study. These reasons are given below.

- Spiritual Intelligence Scale was originally developed for graduate and post-graduate students, whereas the sample in the present study was students of 10+1 class.
- Mental Health Battery was developed on sample selected from Bihar state; School Environment Inventory and Altruism Scale were developed on sample taken from Uttar Pradesh state. The investigator felt that the characteristics of those samples may vary from characteristics of population of present study.
- School Environment Inventory and Altruism Scale were developed in 1984 and 1988 respectively. There is a long time gap in development of these tools and current study.
- The experience and observations of the investigator and researchers suggested that verbal tools should be used in mother tongue or the language to which the participants can easily understand in order to get more reliable results. Further, it was observed in the „try-out" those students studying in government schools and students residing in rural area felt difficulty to respond in English language. That is why, the investigator planned to translate English version of tools in to Punjabi language. Spiritual Intelligence Scale and School Environment Inventory were translated into mother tongue (Punjabi) of representative portion of population on which the study had been conducted. Mental Health Battery and Altruism Scale were not translated in Punjabi language as the students felt themselves comfortable in responding in Hindi language.

8.2 Cross Validation of Spiritual Intelligence Scale and School Environment Inventory

Spiritual Intelligence Scale and School Environment Inventory were submitted to an expert (having experience of tool development and knowledge of translation from English to Punjabi language) with a brief description of constructs and their dimensions. The expert was asked to translate each item of both tools without changing or distorting the ideas containing in it. After getting translation done, the both translated tools (in Punjabi and English versions) were submitted to two more experts in order to evaluate the translation. They were allowed to object on the word(s) or grammatical formation of each item. They were asked to give their suggestions or modifications on separate sheets. Finally, the investigator collected the aspects of disagreement (that were few in number) and chose the alternatives in the light of nature of tool.

For ensuring validity of each item, the translated tools were employed on a representative portion of population upon which the tools were to be used for study. The students of 10+1 class were selected from government, aided and unaided schools with almost equal representation of both gender and location of their residence.

Thus, for calculating inter-item correlations and item-total correlations both tools were employed on 193 students. On the basis of this collected data on Spiritual Intelligence Scale and School Environment Inventory in Punjabi, inter-item correlations and item-total correlations were computed.

8.3 Spiritual Intelligence Scale

Inter-item correlations for Spiritual Intelligence Scale are given in table G.1 of Appendix G. Total 65.77% inter-item correlations are positive, out of which 39.98% are significant and 25.99% are non-significant. 34.23% inter-item correlations are negative, out of which 10.82% are significant and 23.40% are non-significant. Overall result shows that large number of inter-item correlations are positive (65.77%), which ensure the significant validity of the scale.

78.72% item-total correlations are positive and significant at .01 level (All >.15) (see Appendix G). This ensures the (internal consistency) internal validity of the scale as Lindquest (1951) suggested "in selecting items on the basis of item-total correlation, it is better, if at least 75% of correlation is positive and preferably above .15". According to Singh (2004) "when at least 75% of the items yield positive item-total correlations the test is said to be an ideal one. It is not uncommon that remaining 25% items yield either zero or significant negative correlations."

On the same data, reliability and validity of total scale were also computed. Reliability of Spiritual Intelligence Scale was calculated by Cronbach alpha, split half (Even- odd and first half and second half) methods which can be observed in table 6.

Table 6 Reliability of Spiritual Intelligence Scale in Punjabi Language (N=193)

Measure	Reliability Coefficient	Reliability Index
Cronbach's Alpha	.811	
First half - Second half	.705	.827
Even Odd	.660	.795

Thus, experts‟ views, inter-item correlations and item-total correlations ensure the validity of Spiritual Intelligence Scale and Cronbach‟s alpha value as well as correlations by split half ensure the reliability of the scale.

8.4 School Environment Inventory

Inter-item correlations for School Environment Inventory are given in table H.1 of Appendix H. Total 76.98% inter-item correlations are positive, out of which 49.28% are significant and 27.70% are non-significant. 23.02% inter-item correlations are negative, out of which 7.87% are significant and 15.15% are non-significant. Overall result shows that large number of inter-item correlations are positive (76.98%), which ensure significant validity of the scale.

97.14% item-total correlations are positive and significant at .01 level (All > .15) (see Appendix H). This ensures the (internal consistency) internal validity of the scale as Lindquest (1951) suggested “in selecting items on the basis of item-total correlation, it is better, if at least 75% of correlation is positive and preferably above .15”. According to Singh (2004) “when at least 75% of the items yield positive item-total correlations the test is said to be an ideal one. It is not uncommon that remaining 25% items yield either zero or significant negative correlations.” Further, inter-dimension coefficient of correlations was also calculated, which are given in table 7.

Table 7 Inter-Dimension Correlations of School Environment Inventory (N=193)

Dimension		CS	CE	A	P	Rj
Cognitive	*r*	.643				
Encouragement	*p*	.001				
Acceptance	*r*	.864	.740			
	p	.001	.001			
Permissiveness	*r*	.634	.365	.556		
	p	.001	.001	.001		
Rejection	*r*	.172	.023	.255	.335	
	p	.017	.749	.001	.001	
Control	*r*	.555	.369	.431	.337	.175
	p	.001	.001	.001	.001	.015

Table 7 shows that all coefficients of correlation between each pair of dimensions are positive and significant at .01 level. It also provides evidence for high internal consistency and validity of the scale. On the same data reliability and validity of total scale were also computed. Reliability of School Environment Inventory was calculated by Cronbach alpha, split half (Even-odd and first half and second half) methods, which can be observed in table 8.

Table 8 Reliability of School Environment Inventory in Punjabi Language (N=193)

Measure	Reliability Coefficient	Reliability Index
Cronbach's Alpha	.904	
First half - Second half	.864	.927
Even Odd	.793	.885

Thus, experts‟ views, inter-item correlations, and item-total correlations ensure the validity of School Environment Inventory and Cronbach‟s alpha value as well as correlations by split half ensure the reliability of the scale.

8.5 Cross Validation of Mental Health Battery and Altruism Scale

For calculating item-total correlations, Mental Health Battery and Altruism Scale were employed on 50 students. On the basis of this collected data on Mental Health Battery and Altruism Scale item-total correlations were computed.

8.6 Mental Health Battery

Results of product moment correlation revealed that 86.15% item-total correlations are positive, out of which 80.77% are greater than .15 (see Appendix I). This ensures the (internal consistency) internal validity of the scale as Lindquest (1951) suggested "in selecting items on the basis of item-total correlation, it is better, if at least 75% of correlation is positive and preferably above .15". According to Singh (2004) "when at least 75% of the items yield positive item-total correlations the test is said to be an ideal one. It is not uncommon that remaining 25% items yield either zero or significant negative correlations."On the same data reliability and validity of total scale were also computed. Reliability of Mental Health Battery was calculated by split half (Even-odd and first half and second half) methods, which can be observed in table 9.

Table 9 Reliability of Mental Health Battery in Hindi Language (N=50)

Measure	Reliability Coefficient	Reliability Index
First half - Second half	.513	.678
Even Odd	.684	.812

Thus, experts‟ views and item-total correlations ensure the validity of Mental Health Battery and correlations by split half ensures the reliability of the scale. There are six dimensions of scale. Inter-dimension correlations were calculated on the basis of data collected from 50 students of 10+1 class, which is given in table 10.

Table 10 Inter-Dimension Correlations of Mental Health Battery (N=50)

Dimension		ES	OA	AY	SI	SC
OA	*r*	.099				
	p	.494				
AY	*r*	.297	.073			
	p	.036	.615			
SI	*r*	.124	.338	.055		
	p	.391	.016	.704		
SC	*r*	-.050	.290	-.111	.484	
	p	.731	.041	.445	.001	
IQ	*r*	.047	.186	-.099	-.107	.220
	p	.748	.196	.492	.461	.124

Table 10 shows that most of the coefficients of correlation between each pair of dimensions are positive and significant at .05 level. It also provides evidence for high internal consistency and validity of the scale.

8.7 Altruism Scale

Results of product moment correlation divulged that 90% item-total correlations are positive and significant at .01 level (all correlations > .15) (see Appendix J). This ensures the (internal consistency) internal validity of the scale as Lindquist (1951) suggested "in selecting items on the basis of item-total correlation, it is better, if at least 75% of correlation is positive and preferably above .15".

According to Singh (2004) "when at least 75% of the items yield positive item-total correlations the test is said to be an ideal one. It is not uncommon that remaining 25% items yield either zero or significant negative correlations."

On the same data reliability and validity of total scale were also computed. Reliability of Altruism Scale was calculated by Cronbach alpha, split half (Even-odd and first half and second half) methods, which can be observed in table 11.

Table 11 Reliability of Altruism Scale in Hindi Language (N=50)

Measure	Reliability Coefficient	Reliability Index
Cronbach's Alpha	.778	
First half - Second half	.798	.888
Even Odd	.576	.731

Thus, experts" views and item-total correlations ensure validity of Altruism Scale and Cronbach"s alpha value as well as correlations by split half ensures the reliability of the scale.

9. Analysis of Data

The collected data was tabulated and was analysed in the light of objectives framed. The description of statistical techniques for each objective is given in table 11 & Table 12

Summary of Statistical Techniques used

Sr.	Objective No	Statistical Technique
1	1	Product Moment Correlation for Cross Validation and Reliability
2	2	Mean, Standard Deviation
3	3-4	*t*-test
4	5	One way ANOVA
5	6-9	Two way ANOVA
6	10	Three way MANOVA
7	11	Product Moment Correlation
8	12-14	Product Moment Correlation with t- test for testing significance of difference in correlations
9	15	Partial Correlation
10	16	Multiple Correlation
11	17	Regression Analysis (Step wise)
12	18	Factor Analysis
13	19	Path Analysis

References

1. Annie Ward, Howard W. Stoker, Mildred Murray-Ward (1996): "Achievement and Ability Tests - Definition of the Domain", Educational Measurement, 2, University Press of America, pp. 2–5, ISBN 978-0-7618- 0385-0
2. Bruce, H. C. & Neville, P (1979). Evaluation in education. Oxford: Pengamon Press.
3. Carter V.Good (ed.), Dictionary of Education, New York: Mc Graw Hill Book Company, Inc., 1945, p.199.
4. Eli M. Bower et al., A Process for early identification of emotionally disturbed children, Sacramento: California State Department of Education, 1958, p.111.
5. Festinger L. Wish expectation group standards as factors influencing level of aspiration. Journal of Abnormal Social Psychology 1942; 37:184-200.
6. Karl Menninger, The human mind (3rd ed.), New York: Knof, 1945
7. Margaret Mead, "Optimum Mental Health" , in Encyclopedia of Mental Health Vol.I, Albert

Vol. 13, Issue: 05, May: 2024
ISSN: (P) 2347-5412 ISSN: (O) 2320-091X

Deutsch (ed.), 1963, p.4. 0p. Cit.
8. Simpson, J. A., & Weiner, E. S. C. (Eds.). (1989). The Oxford English dictionary (2nd ed.). Oxford: Clarendon.
9. Tom Levin, "Mental Health Careers", in Encyclopedia of Education Vol.VI, Lee C. Deighton (ed.), U.S.: The Macmillan Company, 1971, p.316.
10. Zeidner, Moshe, 1998. Test Anxiety: The state of the art. Plenum Press, NY.