

Promoting Academic Competence in School Adolescents: Results of 15-day Life Style Intervention Programme

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ABSTRACT

There has been paucity of theory-based life style interventions to improve academic competence among school adolescents. Therefore, present study examined the effect of Life Style Intervention Programme (LSIP) introduced through a psycho-education programme on academic competence in a sample (N = 100) of students in a residential school located at Mankapur, Gonda in Uttar Pradesh, India. Academic competence (AC) was evaluated through a self-report measure. The results indicated that adolescents who participated in a 15-day LSIP reported of increased AC. Also, some of the aspects significant for academic performance (i.e., self-esteem, anxiety, depression, optimism) as secondary outcomes were also assessed. The findings have implications for life style education efforts in schools, which could have a major impact on the academic performance of students.

Introduction

In India, the main documented concern for many ailments among school adolescents is for academic achievement (Deb, 2001). Each year, failures and lesser scores in exams than expected, consummates the lives of many students (National Crime Records Bureau, Ministry of Home Affairs, Government of India, 2000). For majority of school adolescents, anxiety, depression and lack of optimism become hallmark of periods after examination (Deb, Chatterjee & Walsh, 2010). In order to enhance academic competence and alleviate negative effects in academic process, existing approaches in the stream of psychology and other related disciplines remain preoccupied with

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changing pedagogy, refining process of examination and cultivating psychological skills among students. While educational reforms do have some roles to play, psychological assistance requires a great deal of expertise, resources and infrastructure in schools (Ponnuswami, 2000). Further, addressing concerns related to AC through individual counselling to larger segment of school adolescent is an arduous task. In view of limitations of traditional approaches, proactive efforts are often recognised of robust importance to deal with multiple concerns related to academic performance (Deb, et al., 2010). Especially, due to evidences of deterioration of life style in adolescents and consequent constraints imposed in daily functioning, capacities, abilities and competence (Leventhal, Prohaska & Hirschman, 1985); it has become emergent to address it (Hans & Mahajan, 1994).

Previous studies indicate that life style practices related to Yoga (Kauts & Sharma, 2010), intake of positive food items (i.e., fruits, vegetables) (Maclellan, Taylor, Wood, 2008), appropriate sleep (Dahl & Lewin, 2002), and religious involvement (Milot & Ludden, 2008; Sharma & Sharma, 2006) may be effective in promoting competence among school adolescents in several areas. Several instances in religious texts suggest that ancient school system of education (*Gurukul*) in India, imbibed many of life style practices in its' educational programme (Koller, 2006). A close observation of Ayurveda by Indian and western scholars reveals that it emphasised life style practices related to nutrition (*ahar*), sleep (*shayan*) and use of leisure hours (*vihar*) for holistic development of individual (Dwivedi, 2005; Fields, 2002; Mishra, 2005; Parashar, 2000; Sastri & Chaturvedi, 1989; Vidyalankar, 1968). Yet, although the idea that competence is associated with life style practices and functioning is a not new, empirical study linking these phenomena are exceedingly limited in both the eastern and western context.

Against this backdrop, the purpose of present study was to assess the effectiveness of life style changes in improving AC and other significant variables pertaining to academic performance. Because AC in this study was assessed primarily within the school setting, it was defined as adolescent's ability to memorise, concentrate, interest in studies and learning capacity required for educational performance. The componential structure of LSIP was based on *Ayurvedic* and *Yogic* notions of life style (Parashar, 2000; Dwivedi, 2005). It was hypothesised that LSIP would promote AC in the intervention group among boys and girls both. Besides, it also would

enhance self-esteem and optimism while reducing the degree of depression and anxiety.

Module of Life Style Intervention Programme (LSIP)

The development of intervention programme (LSIP) consisted of multiple phases of insightful thought through literature review and also negotiations and discussion with several concerned persons. Firstly, prominent adolescent health concerns in recent literature and themes related to life style in Ayurvedic and Yogic texts (*Charaka Samhita, Sushruta Samhita, Gita, Taitryopanisha, Chandogyopanishad, Yoga Darsan etc.*) were explored. In light of this review, the researcher himself went through self-revelations about own experiences related to effect of life style changes during adolescence. After that a focus group discussion with teachers (n = 5) and students (n = 5) in a residential school was conducted to understand their experiences in life. Conclusively, the detailed components of LSIP were identified on the basis of expert advice about their feasibility and relevance to adolescent's health concerns. It was planned to include dietary and sleep regimen based on *Ayurveda* and also certain postures (*Asanas*), deep breathing practices (*Pranayama*), meditation (*Dhyan*), and chanting of mantras as recommended in the system of Yoga in the framework of LSIP. Many of the theoretical and practical issues related to capability of the participants to adhere with LSIP, school routine, and availability of adolescents for Yoga training programme were also taken under consideration during the rigorous process of its' development.

The operationalisation of LSIP was carried out through some insights derived from theoretical models of behavioural change. Based on these insights, LSIP was introduced to adolescents through an improved form of *psycho education*. It intended to inform, persuade and assist the adolescents to adopt healthy dietary habit, sleep routine, Yoga and religious practices. The processes of LSIP included establishment of personal rapport, increasing awareness, persuasion, orientation, assessment, training and persistence for the change. It was undertaken in three stages (i.e., preparation, introduction and implementation). In the first stage, firstly rapport was established with adolescents. Latter on guided by cognitive dissonance theory, participants were provided informational inputs about the risks of practising unhealthy habits and benefits of practicing positive life style behaviours interactive session. In subsequent stage of introduction, based on social learning theory (Bandura, 1977), a power

point presentation and a film about practising of some components of LSIP by some of the popular role models (film, sports and public life) were shown. Deriving ideas from theory of reasoned action (Ajzen & Fishbein, 1980), in the second step of same stage participants in small group were made to engage in addressing the pros and cons of changing life style with the investigator. In the next stage i.e., implementation, Yoga training programme was run for about two weeks besides assuring the compliance for change in dietary habits, avoidance of unhealthy items and sleep. Giving personal regards for changing their life style each day after Yoga training programme reinforced the participants. During the end-up session of intervention, their participation and performance were recognised through video-recording and positive approval by principal and the staff of school.

Each day of LSIP began with a Yoga session of 45 minutes specially designed for this study on the basis of expert advice, feasibility and relevance to concerns related to academic competence. It included practices related to Yoga i.e., *Asanas*, *Pranayama*, *Shavasana* and chanting of Mantras (i.e., Om, Allahoo, and O Christ) included from different religious traditions. The details of Yoga training programme are given Appendix-2. In summary, intervention group participants were engaged in positive change of their dietary habits, avoid unhealthy food items, and follow proper sleep habits and perform Yoga for two weeks (as given in Appendix - 1).

Method

Participants

The sample consisted of 100 school-going adolescents (50 boys and 50 girls) enrolled in junior and senior secondary classes in a residential school participated in the study. There was equal number of adolescents in intervention ($n = 50$) and control ($n = 50$) groups. The two groups were matched for gender, age and grade. The age of participants ranged from 12-18 ($M = 14.4$ years; $SD = 1.89$). The selection in the study was based on two criteria: (1) participants should not have been exposed to the contents of LSIP during the last three months, and (2) they should not be suffering from any disease (e.g., physical disability, chronic diseases, fever etc.) which may impair adherence to the LSIP.

Measures

Academic competence: The assessment of AC included rating on items measuring the student's ability to learn, memorise, concentrate and

interest in studies on five-point scale ranging from never (1) to always (5). The cronbach alpha of the scale with this sample was = .66.

Anxiety: The items related to anxiety were adapted from 100-item Sinha Anxiety Scale Sinha (1968). The internal consistency in this sample of study was (= .56).

Depression: It was evaluated through 21-item Beck Depression Inventory (Beck et. al, 1996). This scale has satisfactory test-retest reliability (.90) and internal consistency (= .86).

Self-esteem: The 10-item Rosenberg Self Esteem Scale (Rosenberg, 1965) is a well-known valid and reliable measure of self-esteem. The scale generally has high reliability with test-retest correlations typically in the range of .82 to .88, and Cronbach's in the range of .77 to .88.

Optimism: It was measured through Life Orientation Test (Scheier, Carver & Bridges, 1994) consisting of 8 items. Psychometrically, the scale has proved to be reasonably sound. The internal consistency of the scale is adequate ($\alpha = .72$), as is its test-retest reliability ($r = .77$ over a four-week interval).

Life Style Change Inventory: The compliance on aspects of LSIP was assessed through a self-report inventory on 7-point rating scale. The respondents were asked of reporting their adherence to the changes during a usual week in last one year. The researcher for use in the present study developed it.

Design

Participants allocated to intervention and control group of both the gender rated their well-being before and after LSIP, yielding a 2 (type of group) x 2 (type of gender) x 2 (testing occasions) factorial design. Participants of both groups were matched in their gender and age.

Procedure

After seeking formal permission from governing body of the school, the researcher got introduced to the students during prayer session by principal of the school. It was followed by informal interaction with teachers and students of the school. After establishing appropriate rapport, firstly the students were provided with informational inputs about effects of specific life style aspects in an informal discussion in classrooms. In subsequent sessions, they were shown a short film and power-point presentation about the popular acceptance of Yoga among celebrities such as actors, models, players and by the general public. Latter on, the adolescents were asked to indicate their

willingness to join the LSIP. Among consenting students, those who met with the criteria were recruited in the study and got allocated in intervention or control group according to design of the study.

After group allocation, measures were administered among intervention and control participants in a hall for pre-test. At the same time, they were given a self-compliance diary in which they noted down their daily engagements in various life style activities. In subsequent phase, the intervention group participants were engaged in small group discussions to share their concerns and experiences related to health and life style. Then, LSIP sessions were run six days in a week over a 2-week period in a hall in the school premises. One session of LSIP lasted for about one hour. The control group participants were engaged in a dialogue for the same duration. The compliance was assessed through personal monitoring by researcher, self-report and attendance in Yoga training programme. The participants again completed the measures after the intervention. After three months of conduct of LSIP, a follow-up was done. It (n = 46) involved administration of a checklist of life style change inventory.

Results

Table 1 displays the mean scores and Standard Deviations on the scales of academic competence, depression, anxiety, optimism and self-esteem as function of type of group, gender and testing occasions. It is apparent from that higher mean scores were found for intervention group at the post-test for academic competence, self-esteem, and optimism and lower mean scores for depression and anxiety in comparison to the control group among boys and girls both.

TABLE 1
Means and SDs of Scores on the Measures of Academic Competence, Self-Esteem, Depression, Anxiety and Anxiety by Type of Group, Gender and Testing Occasions

Measures	Intervention Group				Control Group			
	Boys (n = 25)		Girls (n = 25)		Boys (n = 25)		Girls (n = 25)	
	Pre-test	Post-test	Pre-test	Post-test	Pre-test	Post-test	Pre-test	Post-test
Academic Competence	12.72 (3.33)	16.04 (3.11)	12.48 (3.04)	15.68 (1.86)	13.72 (3.87)	13.76 (3.41)	14.24 (2.55)	14.84 (3.19)
Depression	7.68 (2.24)	6.72 (1.54)	7.68 (1.65)	7.60 (1.15)	8.32 (2.15)	7.72 (2.01)	8.16 (1.92)	7.96 (1.61)
Anxiety	9.16 (2.88)	6.56 (2.87)	8.00 (2.53)	6.40 (1.60)	8.00 (2.90)	7.24 (2.81)	8.04 (1.81)	7.64 (1.93)
Optimism	20.56 (4.23)	23.48 (3.70)	20.00 (2.67)	22.92 (2.37)	18.92 (3.74)	19.72 (2.99)	20.04 (2.83)	20.52 (3.24)
Self-esteem	10.56 (2.81)	12.00 (2.08)	10.40 (2.43)	12.52 (1.53)	10.28 (2.42)	10.36 (2.09)	10.80 (2.39)	10.48 (2.70)

Note: SDs are in parenthesis

Subsequently, the mean scores on academic competence, self-esteem, optimism, anxiety and depression were subjected to separate 2 x 2 x 2 ANOVAs with repeated measure on third factor (testing occasions). The 2 x 2 x 2 analysis partitioned variation due to differences between groups into each pair of independent variables as well as the main effects. All analysis were evaluated at alpha levels of $p < .05$, $p < .01$ & $p < .001$. Table 2 shows the main effects of the type of group, gender and testing occasions for academic competence, anxiety, depression, self-esteem and optimism.

TABLE 2
ANOVA Summaries of Main Effects of Type of Group, Gender and Testing Occasions Performed for Academic Competence, Depression, Anxiety, Optimism and Self-esteem

Variables	Type of Group				Gender				Testing occasions			
	INT	CON	MS	F (1,99)	Boy	Girl	MS	F (1,99)	PRE	POST	MS	F (1,99)
Academic Competence	28.46 (4.73)	28.28 (5.91)	.40 (5.96)	.03 (1.99)	28.12 (4.66)	28.62 (3.26)	3.12 (3.04)	.21 (1.99)	13.29	15.08	160.20	3.49***
Depression	14.84 (2.89)	16.08 (3.33)	19.22 (3.54)	3.90 (2.74)	15.22	15.70 (1.99)	2.88 (1.65)	.58	7.96	7.50	10.58	6.17*
Anxiety	15.06 (4.15)	15.46 (4.25)	2.00 (4.92)	.22	15.48 (3.33)	15.04 (2.58)	2.42 (2.39)	.27	8.30	6.96	89.78	26.91***
Optimism	43.48 (4.79)	39.60 (6.10)	188.18 (6.70)	12.52**	41.34 (4.77)	41.7 (3.43)	42.0	0.13 (3.45)	19.88	21.66	158.42	24.49***
Self-Esteem	22.74 (3.61)	20.96 (4.13)	39.60	(3.90)	5.17* (4.05)	21.60 (2.49)	22.10 (2.31)	3.12.41	10.51	11.34	34.44	10.39**

Note: SDs in parenthesis. * $p < .05$, ** $p < .01$, *** $p < .001$

The results showed significant main effects for Type of Group and Testing Occasions both on the scale of optimism but only for Testing occasions on academic competence, depression, anxiety and self-esteem. This indicated that optimism differed significantly between groups as well as across Testing Occasions but variation in academic competence, depression, anxiety and self-esteem was laid out only according to testing occasions.

The results also indicated interactions that qualified the main effects stated above. Figure 1 shows mean scores of academic competence as a function of testing occasions and type of group. It reveals that reported level of academic competence somehow remains stable among control group but increased substantially among intervention group participants ($F_{(1,96)} = 22.58$, $p < .001$).

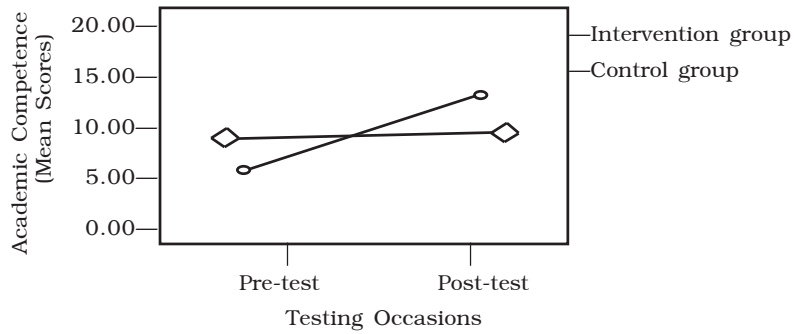


Fig. 1: Mean Scores of Academic Competence as a Function of Testing Occasions and Type of Group

Figure 2 displays mean scores of anxiety as a function of testing occasions and type of group. It suggests that decrement in anxiety among intervention group participants was significantly greater than control group participants ($F_{(1, 96)} = 8.65, p < .01$).

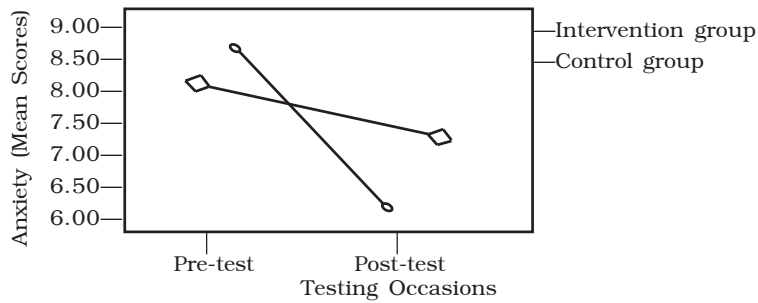


Fig. 2: Mean Scores of Anxiety as a Function of Testing Occasions and Type of Group

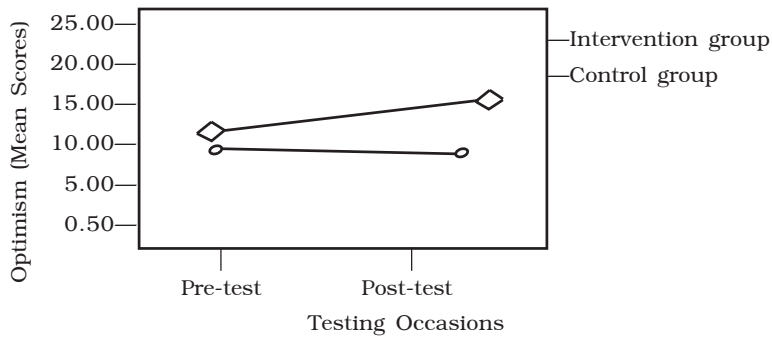


Fig. 3: Mean Scores of Optimism as a Function of Testing Occasions and Type of Group

Figure 3 presents mean scores of optimism as a function of testing occasions and type of group. It indicates that optimism remained relatively stable among control group participants but increased significantly among adolescents exposed to LSIP ($F_{(1,96)} = 10.05, p < .01$).

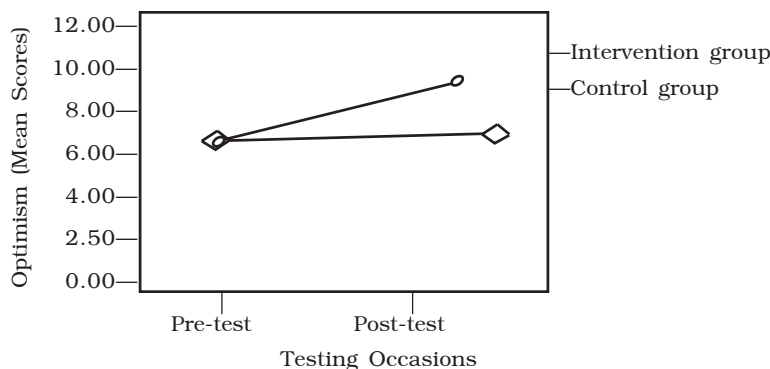


Fig. 4: Mean Scores of Self-Esteem as a Function of Testing Occasions and Type of Group

As seen in Figure 4, the results suggested significant enhancement in self-esteem among intervention participants in comparison to control group participants ($F(1, 96) = 13.62, p < .001$).

Follow-up

A follow-up of the adolescents who participated in the intervention was undertaken after a period of 3 months. To this end, the participants were asked to report the extent to which they were observing the various aspects of life style change which were introduced during the two weeks of LSIP. The compliance for life style changes was noted substantially during follow-up. Gender was found to be insignificant in terms of compliance for changes in life style after three months of LSIP. The results suggested continuation of life style changes in many of related components (72.7% avoiding water during meals, 100% avoiding fast foods, 93.2% avoiding tea, 78.6% getting up before sun rise, 72.7% sleeping before 10 p.m., 72.7% doing Yoga, 91.9% reciting mantras) for at least once a week.

Discussion

Findings from this study provided an empirical support for efficacy of positive life style changes (i.e., dietary habits, food consumption, sleep habits, yoga and religiosity) for academic competence and other secondary outcomes (i.e., anxiety, optimism and self-esteem)

significant for academic performance among adolescents. The results indicated that LSIP led to enhancement in health and well-being among boys as well as girls. There was no significant gender difference with respect to the impact of LSIP. The results contained in improved scores on measures of academic competence, anxiety, self-esteem and optimism evinced evidence for increased concentration, memory, interest in studies, optimistic view, self-confidence and decrease in embarrassment among adolescents as a result of LSIP. These findings support a few other rudimentary studies that have found positive outcomes in academic performance of students practicing Yoga (Kauts & Sharma, 2010), regular sleep habits (Dahl & Lewin, 2002), intake of positive food items (MacLellan, Taylor, Wood, 2008) and involved in religiosity (Sharma & Sharma, 2006).

In summary, the present study yielded empirical evidence that a holistic intervention with a focus on life style does contribute to academic competence of adolescents and the effect was almost similar for boys and girls. The participants of intervention and control group were matched in age and gender of whom latter group displayed lower level of gains on the different measures. The LSIP was multifaceted in its composition. It had elements of psycho-education, yoga, dietary control and managing daily routine activities in life. The participants of intervention group underwent adherence to avoidance of unhealthy food items (i.e., fast food, cold drink, and tea/coffee) and practicing of positive dietary habits (i.e., eating appropriately, not taking excessive water during meals). The participants followed sleep regime practices (i.e., going to bed for sleep before 10 p.m. and waking before sunrise) during intervention period. They also participated in a Yoga training programme conducted at 5:30 a.m. daily for 45 minutes and practised chanting of mantras from different religious traditions. The compliance for all the changes in life style was strictly monitored by the researcher with the support of teachers and staff of the school. Thus LSIP attended to diverse aspects of life in a concerted fashion.

Another feature of the programme was that it continued for two weeks in a set up where continuous monitoring, guidance and support was available in a residential set up. This promoted a conducive climate for the participants. The entire group was active participant and had access to each other as well as the resource person for the programme. The present researcher acted as the instructor and resource for the intervention. He stayed in the school premises and observed the participants on different occasions during the entire duration of intervention. It was observed by researcher that continuity

in time and space was particularly helpful in achieving the goals of intervention. The activities of the programme were made part and parcel of the routine. The experiences of participants revealed that they liked the programme and enthusiastically invested their energy. The follow-up results suggested that the effect of intervention was not a momentary one. It continued and persisted. A higher proportion of adolescents complied with several life style changes (i.e., avoiding fast foods, avoiding intake of tea and cold drinks, getting up before sunrise and doing Yoga) during the follow-up period of three months.

The study demonstrated effectively the efficacy of a psycho-social intervention in the lives of adolescents in a residential school setting. The study has implications for extension of such intervention on a broader scale with suitable modification as per the requirements of the specific settings. The involvement of peers and teachers in the programme works as a source of motivation and support. Being a collectivistic culture the impact of such intervention increases if the changes take place in-group context. However, a close scrutiny of the programme revealed that its goals might be attained more effectively if the parents and teachers too are addressed and their attitude toward life style is changed. The study also very clearly brought out the argument that academic competence can not be nurtured merely by counseling but also can be enhanced by cultivating some change in life style with support from the social context in which adolescents live.

Conclusion

The results showed that academic competence can be enhanced through positive changes in life style. Given the emphasis on alterations in current adolescent life style, the conduct of LSIP has a potential to make a unique contribution to improvement in academic performance. Since adolescence is very critical for academic development and parents often emphasise enhancement of academic skills, the school curriculum needs to have some scope for promoting positive life style (Hamburg, 1990). A close perusal of the details of the present study indicates that while it has expanded the scope of academic competence by relating it with life style there remain some issues, which deserve attention of researchers and policy makers. There is need for thorough investigation for the role of dietary and sleep habits in academic performance. The role of religious involvement, although little understood and considered, continues its presence in human life. There is need for proper understanding

of religio-spiritual activities at home and its relationship with concomitant aspects of AC. While the study has focused on school context the issue of life style requires the involvement of parents. Therefore, it would be pertinent to extend the scope of inquiry to include the parental perspectives on adolescent life style.

The present study offered new possibilities about emergence of the area of life style counselling to deal with multiple concerns related to academic competence, examination anxiety, lack of self-esteem and pessimism among adolescents. The success of intervention points out the possibility that schools offer an ideal setting for teaching and creating environment for compliance of behavioral practices embedded in cultural context of India to adolescents in large groups. Recently life skills education has been introduced for optimising adolescent development. It may be extended to incorporate life style behaviours significant for their academic achievement and thus for career goal in life at large.

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