

Adolescent Lifestyle in India: Prevalence of Risk and Promotive Factors of Health

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Abstract

The present study investigated the prevalence of lifestyle related concerns among school adolescents. The data were collected from 1,500 Indian school students enrolled in sixth to eleventh grades drawn from rural, urban, and metro settings. They completed an anonymous Adolescent Lifestyle Survey. The study documents the multiple concerns related to inappropriate dietary practices (fast food consumption, cold drinks, low fruit and vegetable intake), irregular sleeping habits, less religiosity, mild activity pattern, unhealthy daily routine and pursuance of different forms of risk behaviours. The study also showed an association of life style with several contextual variables (i.e., residential context, developmental stage and gender). The results suggest need for urgent attention to deal with the emerging concerns of risks and promoting factors of health through relevant policy-oriented reformulation, coordinated efforts among stakeholders, and initiating culturally appropriate lifestyle interventions among adolescents.

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Keywords

Adolescence, life style, eating habits, food consumption, physical activity, daily routine, religiosity, delinquency, suicidal attempts, sexual risk taking, substance abuse

Introduction

Adolescents in India, constituting more than one-fifth of the total population, are living in a new age and growing under the multiple influences of family, school, market, and media. In particular, the adolescent lives in urban and metro areas are being shaped by influences of consumerism and market forces, and the ideology of individualism (Verma and Saraswathi, 2002). It can easily be gauged that the plethora of choices offered by persuasive media interfere with the life course and seize the young minds (Call et al., 2002). In addition some micro-changes such as mother's employment, rising parental aspirations, and soaring availability of unhealthy items in market are leading to pervasive alterations in diet, sleep and leisure time activities (Archana, 2004; Dalal and Misra, 2006; Larson et al., 2002; Tripathi and Lal, 1999). Use of labour-saving devices, quicker transport and various electronic gadgets are promoting sedentary mode of living that drastically curtail the scope of physical activity and exercise. Also, there are reports about increased involvement of adolescents with risk behaviours such as early sexual activity, unprotected sex, substance abuse, suicidal attempts and violence (see Verma and Saraswathi, 2002; World Health Organisation, 2004).

The past research in this area does indicate challenges that seriously hamper health and well-being of a vast majority of adolescents in developed as well as developing parts of the world (Belloc and Breslow, 1972; Donovan et al., 1991; Jessor, 1992; Sharma and Misra, 2009). In the Indian context it has been reported that the rural adolescents are plagued by deficiency diseases and urban adolescents' wellness is in jeopardy owing to obesity, body image concerns, and hypertension. Some of the causes of this situation include over-consumption of fast foods, less intake of healthy food items and reduced activity level (Reddy, 2004; Singh et al., 2006; Sofia Centre for Women's Studies and Development, 2003). The increase in leisure time use often results into psychological

and social malfunctioning (Archana, 2004). Recent reports indicate tiredness and difficulties in sleep with implications for a number of psychological and academic problems (Bailly-Lambin et al., 2004). In general, the adolescent lives in India appear to be threatened by their own risky actions more than by germs, viruses, genetic abnormalities, degenerative diseases and the like (Verma and Saraswathi, 2002).

Overall the situation of adolescents is quite alarming but systematic understanding of adolescent life style issues is almost nonexistent (Hans, 1994; Kaila, 2003). Available studies have remained confined to only a select group of risk behaviours particularly in relation to sexuality, substance abuse and violence (Jessor, 1992; Ponnuswami, 2000). Many significant promotive factors such as religiosity and daily routine behaviours among adolescents have not been adequately explored (Sharma, 2004). Consequently, initiatives for adolescent health and well-being have remained segmental (Larson et al., 2002). Despite the acknowledgement of lifestyle issues related both to risks and promotive factors, the provisions in school health education continue to be confined to sexuality. Moreover, In India, for addressing preventive health care of huge population of adolescents, requires detailed understanding of critical risk and promotive factors among segments of adolescent population. Against this backdrop, this study was designed to understand the prevalence of risk and promotive factors pertaining to adolescent life style in the Indian context. In view of health as embedded in the socio-cultural context (Dalal and Misra, 2006), and varying in opportunities, resources, constraints, and discrimination (Sibal, 1997; Srivastava et al., 1997) life style was examined in relation to gender, developmental stage and residential setting. This study attempted to identify both the prevalence of lifestyle related risk and promotive factors. For purposes of this study lifestyle encompassed the following components: diet, sleep, study habits, leisure, physical activity, religious behaviours, and daily routine and risk behaviours.

Since schools hold a central place in the 'developmental agenda' of adolescence, they were considered as pertinent setting for the study. Recognising the differences among residential settings in terms of opportunity, exposure to media, family support, peer pressure, rearing practices, values (Kapur, 1992; Rangnathan, 2003; Sibal, 1997), ecological features, it was expected that there would be difference in the pattern of lifestyle among the adolescents from rural, urban, and metro settings. In

the light of gender differences in the opportunities for leisure (Anandalakshmy, 1994; International Institute for Population Sciences, 2002), biological vulnerability, exposure to health risks, provision of facilities, it was expected that boys and girls would differ in pattern of lifestyle. Finally, developmental stages being one of determining characteristics of lifestyle due to degree of varying peer group contact (Ganguli, 2003); it was expected that young, middle and late adolescents would differ in lifestyle behaviours.

Materials and Method

A cross-sectional sample of 1,500 adolescents (750 boys, 750 girls) enrolled in seventh to eleventh grades at 17 schools in three settings i.e., Delhi (metro city and capital of India), Lucknow (urban city and capital of an Indian state, Uttar Pradesh), Kaisarganj (rural setting, a block of villages in a state—UP) participated in the study. Particular attributes of setting were as follows: rural setting (traditional values, agrarian economy, deprived environment); urban setting (relatively less industrialised undergoing transition); and metro (fast pace of life marked by the impact of globalisation and information revolution).

The study was conducted at diverse schools including co-educational, boys only and girls' only school either run by government, partially aided by government or privately-run by some management societies. Individual schools were selected purposively to reflect variation in residential setting and gender. Adolescent Life Survey was completed by the consenting adolescents in the classroom setting. The data were collected during a period of two months (September 2008—October 2008). Background characteristics of the sample appear in Table 1.

Measures

Background information schedule: It covered information on residential setting, gender, developmental stage, SES, caste, religion, class.

Adolescent Life Style Survey: It was constructed based on experiences of adolescents shared during small group discussions, a careful scrutiny of existing measures (Brener et al., 2002; Wolf et al., 1994) and advice of

Table 1. Background Characteristics of Participants (N = 1,500)

Variable	Boys (n = 750)			Girls (n = 750)		
	Rural N (%)	Urban N (%)	Metro N (%)	Rural N (%)	Urban N (%)	Metro N (%)
Age-group						
12–14	31 (2.06%)	174 (11.6%)	162 (10.7%)	96 (6.4%)	102 (6.8%)	152 (10.13%)
15–16	86 (5.7%)	63 (4.2%)	50 (3.3%)	83 (5.5%)	125 (8.3%)	51 (3.4%)
17–18	33 (2.2%)	13 (0.8%)	38 (2.5%)	71 (4.7%)	23 (1.5%)	47 (3.13%)

experts including developmental psychologists, school counsellors, and practitioners of Yoga and Ayurveda. It included the following components:

Eating Habits were evaluated by using three items dealing with pace and regularity of eating, and intensity of hunger while eating. The respondents had to indicate how frequently each of the dietary habits characterised their own on 5-point scales ranging from 'never' (1) to 'always' (5). *Food Consumption* was assessed by enquiring about frequency of consumption of food and drink items (i.e., bakery items, green salads, seasonal fruits, green vegetables, fast foods, milk, fruit juice, cold or soft drinks), on a 7-point scale; ranging from 'never' (1), to 'every day more than once' (7).

Sleep Habits contained 2 items dealing with regularity in sleep and late night sleep during a usual week obtained on a scale ranging from 'never' (1) to 'always' (4).

Religious Behaviours consisted six items pertaining to practice of religious behaviours (e.g., reciting mantra, attending *satsanga*, visiting religious places, meditation, listening spiritual hymns, and reading scriptures) reported on a 7-point scale ranging from 'never' (1) to 'more than six days a week' (7).

Physical Activity was measured by using one item to measure the days of activity for at least 60 minutes during the usual week on an 8-point scale ranging from '0 days' (1) to '7 days a week'. *Leisure Time* had a list of 20 leisure time activities. The respondents were asked to report the frequency of engagement in each of these activities in a usual week during last 12 months ranging from 'never' (1) to 'more than 6 days a week' (5).

Daily Routine contained six items (getting up before sunrise, sleeping about 10 pm, doing Yoga, bathing, massaging, physical exercises) on a 5-point scale ranging from 'never' (1) to 'seven days a week' (5).

Delinquency was evaluated by enquiring about 'being victim of physical violence', 'physical fights' and 'possession of arms' on a 3-point scale ranging from 'never (1)' 'sometimes (2)' or 'often (3)' during the past 12 months.

Suicidal attempts were evaluated through a question 'Have you actually tried suicide?' replied on a dichotomous (yes–no) scale.

Sexual Risk Taking involved age-appropriate items regarding friendship with opposite sex partners of same age, sexual intercourse, and contraceptive use on a dichotomous ('Yes' and 'No') scale.

Substance Abuse included enquiry about four major addictions, i.e. tobacco (any tobacco products), alcohol, drugs as cocaine heroine, etc. and pan masala on a 3-point scale ranging from 'never (1)', 'I have quit (2)' and 'using presently (3)'.

Results

Prevalence of Risk and Promotive Factors of Health

Based on the total sample (N = 1,500), the prevalence percentages were obtained. Regarding eating habits more than half of sample reported to eat in a hurried manner (58.6 per cent) and about three quarters of eating without appropriate hunger (74 per cent). Results indicated higher consumption of bakery items (46.9 per cent), fast foods (47.4 per cent) and cold drinks (44 per cent) in contrary to healthy food items like fruits (17.5 per cent), milk (25.2 per cent), green vegetables (10.9 per cent) and green salads (19.5 per cent). It was revealed that late sleeping is emerging as common phenomenon among more than three-quarters of adolescents (77.5 per cent). In relation to religiosity, visiting religious places was noted to emerge as common religious practice (60 per cent) in comparison to other religious behaviours (i.e., listening hymns, reciting mantra, reading scriptures, and meditation).

Engagement in inactive sedentary habits (i.e., mobile chatting, Internet, fast music, video games) was reported by more than half of the adolescents studied. About one-third of participants accepted some kind

of engagement in relaxing positive leisure activities (i.e., cultural event, listening classical music). Besides, normal healthy daily routine practices (i.e., Yoga, physical exercise) were reportedly performed by less than two-fifth of the sample. A majority of participants (93 per cent) reported of having experienced some form of physical fights. About 18 per cent of adolescents reported of suicidal attempts. However, indulgence in sexual activity was stated only by about 7 per cent of the sample while only 3 per cent used protective means. Pan Masala (5 per cent) was found to be more prevalent than alcohol (1.3 per cent) and drugs (.3 per cent).

Life Style Concerns in Diverse Socio-cultural Contexts

To analyse the significant lifestyle concerns among different segments of the sample, the mean scores of each lifestyle variables were subjected to separate $3 \times 2 \times 3$ between group factorial ANOVAs (analysis of variance) with three types of setting, two gender groups, and three age levels. Later on for group-wise comparisons, post-hoc analysis were run for each individual component.

Residential setting wise comparisons revealed that rural adolescents' lives are marred by inadequate intake of healthy food items but higher consumption of bakery items ($F_{(2, 1497)} = 8.29, p < 0.001$), TV viewing ($F_{(2, 1497)} = 15.18, p < 0.001$), exposure to fast music ($F_{(2, 1497)} = 9.48, p < 0.001$), and avoidance of cultural participation ($F_{(2, 1497)} = 14.81, p < 0.001$). Urban adolescence is characterised by greater use of Internet ($F_{(2, 1497)} = 180.08, p < 0.001$), video games ($F_{(2, 1497)} = 208.77, p < 0.001$), least practice of Yoga ($F_{(2, 1497)} = 26.14, p < 0.001$) and limited intake of fruit juice ($F_{(2, 1497)} = 28.14, p < 0.001$). Metro adolescent lives are marked by irregular sleep ($F_{(2, 1497)} = 12.46, p < 0.001$), least religious behaviours such as reciting mantra ($F_{(2, 1497)} = 22.96, p < 0.001$), attending *satsanga* ($F_{(2, 1497)} = 24.79, p < 0.001$), and physical fights ($F_{(2, 1497)} = 4.14, p < 0.05$). Gender-wise comparisons indicated that female adolescent lives are featured by higher consumption of bakery items ($F_{(1, 1498)} = 4.81, p < 0.05$), irregular sleep ($F_{(1, 1498)} = 6.73, p < 0.01$), but less participation in sports, games such as in table tennis ($F_{(1, 1498)} = 77.71, p < 0.001$) Khokho or Kabaddi ($F_{(1, 1498)} = 20.69, p < 0.001$), Yoga ($F_{(1, 1498)} = 77.71, p < 0.001$) and physical exercise ($F_{(1, 1498)} = 20.69, p < 0.001$). On the other hand,

male adolescent life is characterised by greater listening of fast music ($F_{(1, 1498)} = 8.96, p < 0.001$) and violence ($F_{(1, 1498)} = 30.57, p < 0.001$) but less by religious behaviours such as listening hymns ($F_{(1, 1498)} = 13.38, p < 0.001$), attending *satsanga* ($F_{(1, 1498)} = 5.32, p < 0.05$).

Age-level comparison demonstrated higher prevalence of TV viewing ($F_{(2, 1497)} = 9.18, p < 0.001$), physical fights ($F_{(2, 1497)} = 11.60, p < 0.001$), limited participation in games and sports such as in football ($F_{(2, 1497)} = 4.80, p < 0.01$), hockey ($F_{(2, 1497)} = 11.20, p < 0.001$) among early adolescents. Middle adolescents' life is significantly characterised by higher prevalence of consumption of bakery items ($F_{(2, 1497)} = 5.39, p < 0.001$), and Internet use ($F_{(2, 1497)} = 4.81, p < 0.01$). Late adolescents' lives are featured by moderately excessive cold drink ($F_{(2, 1497)} = 3.43, p < 0.05$), late sleeping ($F_{(2, 1497)} = 15.63, p < 0.001$), late rising at moderate level ($F_{(2, 1497)} = 3.15, p < 0.05$), but limited religious activities such as in visiting religious places ($F_{(2, 1497)} = 9.43, p < 0.001$) and meditation ($F_{(2, 1497)} = 8.32, p < 0.001$). Residential setting x gender x age-groups interactions revealed that most of the adolescents with lifestyle problems belonged to age-group of 16–18 years. Lifestyle concerns related to excessive consumption of fast foods ($F_{(12, 1489)} = 3.58, p < 0.01$), cold drinks at moderate level ($F_{(12, 1489)} = 3.04, p < 0.05$), and moderately less practice of religiosity such as meditation ($F_{(12, 1489)} = 2.77, p < 0.05$) were more pronounced among urban late adolescent girls while restricted participation in a game khokho and kabaddi ($F_{(12, 1489)} = 3.91, p < 0.01$), yoga ($F_{(12, 1489)} = 10.94, p < 0.05$), physical exercise at moderate level ($F_{(12, 1489)} = 3.20, p < 0.05$) and moderately higher level of victimisation ($F_{(12, 1489)} = 2.89, p < 0.05$) was more prevalent among late rural adolescent girls. Late adolescent boys in metro setting showed least consumption of green vegetables ($F_{(12, 1489)} = 5.19, p < 0.001$), less physical activity ($F_{(12, 1489)} = 2.73, p < 0.05$) and getting up late in the morning ($F_{(12, 1489)} = 3.26, p < 0.05$).

It was found that suicidal attempts are more prevalent among rural boys than boys from other residential contexts ($\chi^2_{(4)} = 6.65, p < 0.05$), among urban girls than girls from other settings ($\chi^2_{(4)} = 11.53, p < 0.05$) and among boys than girls ($\chi^2_{(2)} = 4.01, p < 0.05$). The reported incidences of sexual victimisation were higher among metro boys than urban and rural boys ($\chi^2_{(2)} = 30.17, p < 0.001$), among urban girls ($\chi^2_{(2)} = 14.65, p < 0.001$) than rural and metro urban girls. The incidence of sexual intercourse was greater among metro adolescent boys than urban and rural boys ($\chi^2_{(2)} = 8.28, p = 0.01$), boys than girls ($\chi^2_{(1)} = 11.66, p = 0.001$),

metro-urban girls than rural and urban girls ($\chi^2_{(2)} = 7.89, p = 0.01$). However, protective sex was more prevalent among metro boys than urban and rural boys ($\chi^2_{(2)} = 5.67, p = 0.05$) and among boys than girls ($\chi^2_{(1)} = 42.93, p < 0.001$). There was higher level of use of tobacco ($\chi^2_{(2)} = 9.5, p < 0.05$), pan masala ($\chi^2_{(2)} = 10.38, p < 0.006$), alcohol ($\chi^2_{(2)} = 13.3, p = 0.001$) and drugs ($\chi^2_{(2)} = 8.75, p < 0.001$) among boys than girls. Use of Pan Masala ($\chi^2_{(4)} = 27.45, p < 0.001$) and alcohol ($\chi^2_{(4)} = 17.26, p = 0.002$) was found higher among urban adolescents.

Discussion

The present survey empirically investigated the prevalence of lifestyle practices and their variation in relation to some key background characteristics (i.e., residential setting, gender, and developmental stages). It yielded conspicuous prevalence of unhealthy dietary habits, unfavourable food consumption (i.e., bakery items, fast food, cold drink), irregular sleep habit, inactive leisure time engagement (mobile, videogame, TV, Internet) and some of the risk behaviours pertaining to victimisation of violence, physical fights and suicidal attempts among a vast section of adolescents. In contrast, lesser prevalence of healthy lifestyle-related factors such as consuming healthy food items (i.e., fruits, vegetables, milk), active leisure (i.e., sports, scout and cultural activities), and daily routine practices (Yoga, physical exercise) were also observed. The enquiry on some of other risk behaviours related to sexual risk-taking and substance abuse although endorsed by limited number of adolescents, yielded a noticeable prevalence percentage. The results also revealed significant effect of residential setting, gender and developmental stages on food choices, leisure time activities, religious involvement, delinquency, suicidal attempts, premarital sexual activity, and substance abuse. Particularly, late adolescent boys and girls across the residential settings were noted to be highly vulnerable.

The present findings indicate low degree of self-regulation among the adolescents. It seems that socio-cultural pressures and environmental changes are putting strain on adolescent living. The dietary inadequacy found among sizeable number of adolescents is in consonance with the previous studies (Kapil et al., 1993; Srivastava et al., 1997). Besides,

increasing availability of readymade eatables in appealing shapes and flavours, advertisements, and acculturation appear to have induced craving for many unhealthy eatables (i.e., fast food, bakery items, and cold drinks) not only among urban and metro but also among rural adolescents. The powerful presence of mass media has led to popularisation of fashion, television, Internet and video games among the adolescents particularly in the urban and metro settings.

It seems that the economic and technological advances have changed the traditional and healthy sleeping habits (i.e., early sleep, early rising), leisure time use (i.e., reading, listening music, games, sports) and physical activity by irregular sleeping, inactivity and sedentary activities (i.e., computer games, Internet, mobile use) (Archana, 2004; Khanna and Singh, 2000; Wadkar, 1998). Concomitant to this the opportunities for risk taking have also increased. It was found that the aggression level has gone up with almost alarming level. More than 90 per cent of adolescents reported having experiences of some form of physical fight than an earlier finding about only 60 per cent of adolescents involved in aggressive acts (Verma and Singh, 1998). The study has also shown that premarital sex is not as common as in Western countries but not as rare as usually believed. The exposure of crude information in an unhealthy context ignoring emotional and personal issues through media and films may be playing its role and increasing the incidence of sexual activity.

The prevalence of life style has been documented to be influenced by the residential setting, gender and developmental stages (Srivastava et al., 1997). The present study showed that the heftiness and rapidity of metro adolescent's life are reflected in their sleep habits, performance of religious and daily routine behaviours (Kapur, 1992). The urban adolescents are undergoing 'transition between rural and metro ethos of life' (Rangnathan, 2003). They appear to share certain aspects of rural (or traditional) ethos of life. The meals consumed by rural and urban adolescents both were devoid of green salads, seasonal fruits and milk. Under the influence of urban culture propagated through TV, newspapers, rural adolescent's leisure time use, consumption pattern also seem to be undergoing unhealthy alterations complicated by lasting malnutrition. The findings related to less consumption of healthy food items, limited opportunities for sports, games, leisure but more for religious behaviours among girls indicate towards continuation of gender roles and

discrimination in societal perceptions, rearing practices and emphasis on inculcating values leading to disadvantage in certain terms. Increased peer relationship among older adolescents appears to increase vulnerability for multiple life style problems (Ganguli, 2003).

The lifestyle trends emerged from the study have significant ramifications for adolescent health and well-being. Inappropriate dietary habits (i.e., eating without appropriate hunger and eating hurriedly) cause digestive problems and diseases (i.e., acidity, gastric disorders, indigestion, etc.). While there are enormous issues of deprivation among rural adolescents, the urban adolescents seem to suffer with over consumption of unhealthy stuff (Reddy, 2004; Singh et al., 2006). Since adolescence is a period of rapid growth requiring extra amount of nutrients; there is need for emphasis on promoting intake of positive food items (etc., green vegetables, green salads, seasonal fruits, milk). Higher risk of malnutrition among adolescent girls can cause harm throughout the reproductive years and beyond (Sofia Centre for Women's Studies and Development, 2003). Especially, iron deficiency due to low intake of green vegetables, milk, and seasonal fruits puts them at higher risk for anemia, and subsequently to several gynecological disorders. The increasing availability of bakery items with the expansion of current multinational fast food trade and low level of physical activity make adolescents vulnerable to obesity, chronic diseases and several digestive psychological disorders (Baranawoski et al., 1992; Kapil et al., 1993). The potential risks related to excessive use of Internet, TV viewing, video game, chatting on mobile, surfing on cognitive development, academic competence, well-being and personal safety sound a serious note of concern (Ahuja and Kumari, 2008; Altman, 2001; Anderson and Bushman, 2001). The overuse of cinema and TV for entertainment may make the adolescents particularly vulnerable to the imitation of unrealistic situation, adjustment problems, low academic performance, and concerns related to body image (Altman, 2001; Archana, 2004).

Increased incidence of aggressive behaviour may lead to a host of negative outcomes, including school drop out, peers rejection, juvenile delinquency, and even adult criminality and psychopathology (Mohan and Kataria, 1998; Sen, 1993; Singh and Singh, 1989). In recent years, addiction of various kinds (tobacco, alcohol, drugs) may be leading to serious health ailments such as respiratory disorders, cardiovascular diseases and cancer (Bhattacharya, 1998). A girlfriend or boyfriend

relationship may provide the opportunity for and inclination toward sexual activity (Whitebeck et al., 1999). The decrease in age for sexual intercourse involves higher risk for unintended pregnancy, reduction in educational performance, unsafe abortion resulting into maternal mortality, anemia, high blood pressure, toxemia, hemorrhage, and obstructed labour for young women, and premature birth, low birth weight, and death for infants/newborns (Wellings, 2006; Zheng and Anderson, 2009). Further, in social milieu early sexual activity is likely to yield negative consequences for later development (Maharaja and Munthre, 2007). Seeing the immense grave consequences of premature sex and current status of efficacy of sex education programmes, it demands urgent attention (Gandhi and Arora, 1993).

Overall, the results reflect a huge scope for improving physical and psychological capital of the nation through positive living. Such a change is need of hour when we are witnessing a sea-change in mounting rate of lifestyle related ailments and escalation of financial burden for their treatment (Sinha, 2009). Since majority of chronic conditions (i.e., cardio vascular ailments, brain stroke, cancer, diabetes, respiratory infections, back ache, ulcers, AIDS etc.) are found to be linked to lifestyle factors (Ebbert et al., 2003; Lindstorm et al., 2003) established during adolescence; there is urgent need to focus on changing lifestyle during the same period. School health education needs to encompass positive aspects of living in a holistic and integrated manner. The rationale and plan of interventions should be tuned to cultural and contextual aspects of adolescent lives, to target groups of adolescents according to age and tailor the interventions to individual requirements. The change in adolescent lifestyle may provide healthy youth for tomorrow for the nation and save huge funds.

Concluding Comments

In view of findings on higher prevalence of health-compromising and but less of health-enhancing aspects of life style, health care approaches need to be double pronged that is they should address risk factors and promotive factors both. Distinctive concerns in relation to residential settings, gender, and developmental stages have implications for

particular intervention strategies and goals in order to address their health and well-being. The study has attempted to provide a view of emerging life style concerns; however it had several limitations. Therefore, results need to be interpreted with caution. Although response rate was higher, participation in the study was voluntary. There were less replies on sensitive risk behaviours, a point noted by other researchers (Hans and Mahajan, 1994; Mathai et al., 1997). Despite these limitations, the study does point towards emergence of serious multiple life style concerns and need for making efforts towards lifestyle changes in relation to their ecological and social set-up.

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