CHAPTER II

REVIEWS OF RELATED LITERATURE

A study of relevant literature is vital step to get a full picture of what has been done with regard to the problem under study. Such a review provides the investigator to familiar with the past work and the work that is to be done. It gives new ideas, theories and comparative materials for the researcher. The related literature collected pertaining to the study has been described in this chapter.

Review of literature is a valuable guide to defining the problem, recognizing its significance, data gathering methods, appropriate study design and source of data. This helps to sharpen the understanding of the problem area and provides a background for the research project. So the researcher must have up-to-date information about what has been thought and done in the area of his/her research. The success of any research work depends upon the understanding and familiarity of the investigator with the studies and literature related to the topic. In review of literature, the researcher attempts to explore what others have learnt about similar works and to gather information relevant to the research problem at hand. Since effective research is based upon past knowledge, the review of related literature helps to eliminate duplication of what has been explored by other researches in the same field. So review of literature is an inevitable part of any research study. The study of adolescent behaviour has been the focus of interest of many
psychologists in the present century. Numerous attempts have been made to examine the complex nature of the relationship of various causative factors to the onset, prevalence and control of Personality, Anger and Frustration Tolerance among adolescent girls. The present chapter was an attempt to review the studies related and linking selected psychological variables to related problems of Exercise, Music and Meditation.

2.1 STUDIES RELATED TO EXERCISE AND PSYCHOLOGICAL VARIABLES OF ADOLESCENTS

Pradeep Singh Chahar (2014) Physical inactivity is one of the leading causes of serious chronic disease which keeps on increasing with high rate. Physical activity plays an important role in enhancing the various physiological dimensions of growth and development in children and adolescents. Physical activity of different duration will enhance cardiovascular health, bone ossification, muscle growth and endocrine glands secretion. Data suggested that anthropometry is a key component for growth and development assessment in children and adolescent especially body mass index, which is quite effective and reliable. Without engaging the children’s in physical activity leads to increased chances of obesity, cardiovascular diseases, cancer and diabetes in future and that fastenings the attention of fitness personal and policy makers. Developing good practices early in life, will benefited in future. Hence, parents, teachers and policymakers have to plan accordingly to make their child healthy and fit. This article reviews the available literature regarding the physiological basis of growth and development of children and adolescents in relation to physical activity along with various anthropometric assessment methods.
Matthew A. Stults-Kolehmainen and Rajita Sinha (2014) The aim of this paper was to review the literature investigating the influence of stress on indicators of PA and exercise. The literature search found 168 studies that examined the influence of stress on PA. Studies varied widely in their theoretical orientation and included perceived stress, distress, life events, job strain, role strain, and work–family conflict but not lifetime cumulative adversity. To more clearly address the question, prospective studies ($n = 55$) were considered for further review, the majority of which indicated that psychological stress predicts less PA (behavioral inhibition) and/or exercise or more sedentary behavior (76.4 %). Both objective (i.e., life events) and subjective (i.e., distress) measures of stress related to reduced PA. Prospective studies investigating the effects of objective markers of stress nearly all agreed (six of seven studies) that stress has a negative effect on PA. This was true for research examining (a) PA at periods of objectively varying levels of stress (i.e., final examinations vs. a control time point) and (b) chronically stressed populations (e.g., caregivers, parents of children with a cancer diagnosis) that were less likely to be active than controls over time. Studies examining older adults (>50 years), cohorts with both men and women, and larger sample sizes ($n > 100$) were more likely to show an inverse association. 85.7 % of higher-quality prospective research (7 on a 9-point scale) showed the same trend. Interestingly, some prospective studies (18.2 %) report evidence that PA was positively impacted by stress (behavioral activation). This should not be surprising as some individuals utilize exercise to cope with stress. Several other factors may moderate stress and PA relationships, such as stages of change for exercise. Habitually active individuals exercise more in the face of stress, and those in
beginning stages exercise less. Consequently, stress may have a differential impact on exercise adoption, maintenance, and relapse. Preliminary evidence suggests that combining stress management programming with exercise interventions may allay stress-related reductions in PA, though rigorous testing of these techniques has yet to be produced. Overall, the majority of the literature finds that the experience of stress impairs efforts to be physically active. Future work should center on the development of a theory explaining the mechanisms underlying the multifarious influences of stress on PA behaviors.

**Hubbs A et al., (2012)** The purpose of this study was to identify population and sex-specific relationships between perceived stress, self-esteem, and physical activity in college students. 90 students, ages 18 and older and enrolled in five sections of a health and human behavior class during the spring 2010 semester, were contacted for this study with 74 consenting to serve as study participants. Each participant completed three surveys: the Rosenberg Self-Esteem Scale, the Perceived Stress Scale, and the International Physical Activity Questionnaire. Significant correlations were observed between perceived stress and self-esteem in men, and in women. Physical activity was not significantly correlated with perceived stress or self-esteem.

**Lemmon CR et al., (2007)** The goal was to identify correlates of adherence to a structured physical activity (PA) program. Subjects were 136 8- to 12-year-old African-American girls. Potential correlates at baseline were: 1) fitness index (FI: % body fat
from DXA and cardiovascular fitness from treadmill test), and 2) self-esteem, anxiety, attitude to school and teachers, relationship with parents, and interpersonal relations (Behavioral Assessment System for Children). The 10-month PA program included 80 minutes of PA offered 5 days/wk. Regression tree classification was used to model attendance. Six splits occurred (34% total variance explained). Less anxious subjects attended more often than highly anxious subjects (3 days/wk vs. 1.5 days/wk) did. Subjects with a healthier FI attended more often than those with a less healthy FI (3 days/wk vs. 0.5 days/wk) did. Younger subjects attended more often than older ones (3 days/wk vs. 2.5 days/wk) did. The next two splits were again with anxiety (3.5 days/wk vs. 3 days/wk) and FI (3 days/wk vs. 2.5 days/wk). Finally, subjects with higher levels of self-esteem attended more often than those with lower levels (3.5 days/wk vs. 2 days/wk) did. Subjects who were self-confident, younger, fitter, and less anxious were more likely to participate regularly. This suggests that children who may be more likely to benefit from a PA program are less likely to participate. To enhance participation in PA programs, especially in older African-American girls: 1) psychological concerns should be identified and addressed before enrollment, and 2) programs should be designed to be appealing to children of all fitness levels.

Marco Bonhauser et al., (2005) Regular physical activity is associated with a reduced risk of all-cause mortality, and mortality due to cardiovascular disease and cancer. Among adolescents, physical activity is associated with benefits in the prevention and control of emotional distress, and improvement of self-esteem. Countries in transitional epidemiological scenarios, such as Chile, need to develop effective strategies
to improve physical activity as a way to face the epidemic of chronic diseases. The objective of this study was to evaluate the effects of a school-based physical activity program on physical fitness and mental health status of adolescents living in a low socioeconomic status area in Santiago, Chile. A quasi-experimental design was used to evaluate the effects of the program over one academic year. The study included 198 students aged 15 years old. Two ninth grade classes were randomly selected as the intervention group, with two classes of the same grade as controls. A social planning approach was used to develop the intervention. The program was designed and implemented based on student preferences, teachers' expertise and local resources. Changes in physiological and mental health status were assessed. After the intervention, maximum oxygen capacity achieved a significant increase of 8.5% in the intervention versus 1.8% in the control group (p < 0.0001). Speed and jump performance scores improved significantly more in the intervention versus the control group (p > 0.01). Anxiety score decreased 13.7% in the intervention group versus 2.8% in the control group (p < 0.01), and self-esteem score increased 2.3% in the intervention group and decreased 0.1% in the control group after the end of the program (p < 0.0001). No significant change was observed in the depressive score. Student participation and compliance with the program was >80%. To conclude, a school-based program to improve physical activity in adolescents of low socioeconomic status, obtained a high level of participation and achieved significant benefits in terms of physical fitness and mental health status.
Young-ho Kim (2004) To examine the exercise behavior of Korean adolescents, reveal the differences in self-efficacy and decision balance by the stages of exercise behavior, and identify the relationship between exercise behavior and psychological variables. A total of 671 adolescents randomly selected from junior high and high schools in Seoul were surveyed. Three Korean-version questionnaires were used to identify the stage of exercise behavior and psychological attributes of adolescents: Stage of Exercise Behavior Change Questionnaire, Decision Balance Scale for Exercise, and Exercise Self-efficacy Scale. Data were analyzed by frequency analysis, $^2$ test, MANOVA, correlation analysis, and regression analysis. The exercise pattern of Korean adolescents was different by each stage of exercise behavior: precontemplation (17.5%), contemplation (16.6%), preparation (20.4%), action (28.3%), and maintenance (17.2%). Significant differences in exercise behavior distribution emerged as a function of gender and age. In addition, exercise efficacy, exercise benefits and exercise barriers differentiated across the stages of exercise behavior. Furthermore, the findings revealed that adolescents' exercise behavior was significantly correlated with the selected psychological variables, and that psychological variables had a statistically significant impact on the exercise behavior. This study provides information about relatively unstudied Korean adolescents and has the potential to influence the development of better exercise interventions and health promotion programs for adolescents.
Salmon P (2001) Until recently, claims for the psychological benefits of physical exercise have tended to precede supportive evidence. Acutely, emotional effects of exercise remain confusing, both positive and negative effects being reported. Results of cross-sectional and longitudinal studies are more consistent in indicating that aerobic exercise training has antidepressant and anxiolytic effects and protects against harmful consequences of stress. Details of each of these effects remain unclear. Antidepressant and anxiolytic effects have been demonstrated most clearly in subclinical disorder, and clinical applications remain to be exploited. Cross-sectional studies link exercise habits to protection from harmful effects of stress on physical and mental health, but causality is not clear. Nevertheless, the pattern of evidence suggests the theory that exercise training recruits a process which confers enduring resilience to stress. This view allows the effects of exercise to be understood in terms of existing psychobiological knowledge, and it can thereby provide the theoretical base that is needed to guide future research in this area. Clinically, exercise training continues to offer clinical psychologists a vehicle for nonspecific therapeutic social and psychological processes. It also offers a specific psychological treatment that may be particularly effective for patients for whom more conventional psychological interventions are less acceptable.

Dunn AL et al., (2001) The purpose of this study was to examine the scientific evidence for a dose-response relation of physical activity with depressive and anxiety disorders. Computer database searches of MEDLINE, PsychLit, and Internet and
personal retrieval systems to locate population studies, randomized controlled trials (RCTs), observational studies, and consensus panel judgments were conducted. Observational studies demonstrate that greater amounts of occupational and leisure time physical activity are generally associated with reduced symptoms of depression. Quasi-experimental studies show that light-, moderate-, and vigorous-intensity exercise can reduce symptoms of depression. However, no RCTs have varied frequency or duration of exercise and controlled for total energy expenditure in studies of depression or anxiety. Quasi-experimental and RCTs demonstrate that both resistance training and aerobic exercise can reduce symptoms of depression. Finally, the relation of exercise dose to changes in cardiorespiratory fitness is equivocal with some studies showing that fitness is associated with reduction of symptoms and others that have demonstrated reduction in symptoms without increases in fitness. All evidence for dose-response effects of physical activity and exercise come from B and C levels of evidence. There is little evidence for dose-response effects, though this is largely because of a lack of studies rather than a lack of evidence. A dose-response relation does, however, remain plausible.

Calfas, K.J. and Taylor, W.C. (1994) studied to identify the most consistent relationships among psychological variables and physical activity in youth (ages 11-21 years), 20 articles on depression, anxiety, stress, self-esteem, self-concept, hostility, anger, intellectual functioning, and psychiatric disorders are reviewed. Physical activity was consistently related to improvements in self-esteem, self-concept, depressive symptoms, and anxiety/stress. The effect sizes were +.12, -.15, and -.38 for self-esteem/self-concept, stress/anxiety, and depression, respectively. The evidence for
hostility/anger and academic achievement was inconclusive. No negative effects of physical activity were reported. The literature suggests that physical activity in youth is psychologically beneficial. More research is needed to confirm previous findings. Adolescents should engage in moderate or vigorous aerobic activity approximately three times per week for a total of at least 60 minutes per week. The authors find moderate support for the existence of a positive relationship between physical activity and various psychological outcomes, in particular, an increase in self-esteem and a decrease in stress/anxiety and depression. Very little evidence was available which explores links between physical activity and hostility/anger or academic achievement/intellectual functioning. Although no studies reported negative effects of physical activity the potential for this is mentioned.

Norris R et al., (1992) To determine whether participating in physical activity affects psychological well-being in an adolescent population, 147 adolescents completed self-reports of exercise and psychological stress and well-being. Analysis revealed that those who reported greater physical activity also reported less stress and lower levels of depression. Adolescents who experienced a higher incidence of life events also demonstrated a strong association between stress and anxiety/depression/hostility. To investigate the effects of exercise training on psychological well-being, adolescents were assigned to either high or moderate intensity aerobic training, flexibility training or a control group. The training groups met twice per week for 25-30 min. Aerobic fitness levels, heart rate, blood pressure and self-report of stress and well-being were measured prior to and following 10 weeks of training. Post-training fitness measures confirmed the
effectiveness of the high intensity aerobic exercise and between groups differences for physiological and some psychological measures were found. Subjects undergoing high intensity exercise reported significantly less stress than subjects in the remaining three groups. The relationship between stress and anxiety/depression/hostility for the high intensity group was considerably weakened at the end of the training period. For the remaining subjects, however, this relationship was, if anything, strengthened. This experiment provides evidence to suggest that in an adolescent population, high intensity aerobic exercise has positive effects on well-being.

Brown JD and Siegel JM (1988) The hypothesis that physical exercise provides benefits to individuals under periods of life stress has rarely been subject to empirical verification. This article presents the results of a longitudinal study of stress and well-being in adolescence in which the ability of exercise to buffer stress-induced deteriorations in physical health was examined. In accordance with predictions, prospective analyses revealed that the negative impact of stressful life events on health declined as exercise levels increased. These findings suggest that exercise may be a valuable resource for combating life stress. Discussion centers on possible mediating mechanisms and on the practical implications of the results.

Gruber (1986) concluded that physical fitness contributes to an increase in self-esteem. The study set out to examine the link between aerobic exercise, self-esteem, and problem behaviors in third to fifth grade children. Gruber (1986) and Newsham (1989)
report a trend among exercise studies that indicate that self-concept increased positively, and behavior problems lessened, after exercise interventions were implemented. Physical education in early elementary aged children does contribute to an increase in self-esteem. The greatest gains were seen in children with special needs.

Taylor C B et al., (1985) Mental disorders are of major public health significance. It has been claimed that vigorous physical activity has positive effects on mental health in both clinical and nonclinical populations. This paper reviews the evidence for this claim and provides recommendations for future studies. The strongest evidence suggests that physical activity and exercise probably alleviate some symptoms associated with mild to moderate depression. The evidence also suggests that physical activity and exercise might provide a beneficial adjunct for alcoholism and substance abuse programs; improve self-image, social skills, and cognitive functioning; reduce the symptoms of anxiety; and alter aspects of coronary-prone (Type A) behavior and physiological response to stressors. The effects of physical activity and exercise on mental disorders, such as schizophrenia, and other aspects of mental health are not known. Negative psychological effects from exercise have also been reported. Recommendations for further research on the effects of physical activity and exercise on mental health are made.
2.2 STUDIES RELATED TO MUSIC AND PSYCHOLOGICAL VARIABLES OF ADOLESCENT

Thomas Schafer (2016) Individual differences in the strength of music preference are among the most intricate psychological phenomena. While one person gets by very well without music, another person needs to listen to music every day and spends a lot of temporal and financial resources on listening to music, attending concerts, or buying concert tickets. Where do these differences come from? The hypothesis presented in this article is that the strength of music preference is mainly informed by the functions that music fulfills in people’s lives (e.g., to regulate emotions, moods, or physiological arousal; to promote self-awareness; to foster social relatedness). Data were collected with a diary study, in which 121 respondents documented the goals they tried to attain and the effects that actually occurred for up to 5 music-listening episodes per day for 10 successive days. As expected, listeners reporting more intense experience of the functional use of music in the past (1) had a stronger intention to listen to music to attain specific goals in specific situations and (2) showed a larger overall strength of music preference. It is concluded that the functional effectiveness of music listening should be incorporated in existing models and frameworks of music preference to produce better predictions of inter individual differences in the strength of music preference. The predictability of musical style/genre preferences is also discussed with regard to the present results.
Karen S Thomas (2015) Music plays an important part in the transitional period of life for adolescents as they define their personal and social identities and build their preferences for music. Recent neuroscientific research into the adolescent brain has produced developmental models that work to explain the neural reasons behind teenage behavior and development. These neural responses and developments of the brain provide some understanding for many of the social, as well as musical, choices that teenagers make during this period. By examining processes in the adolescent brain, we can begin to understand some reasons behind choices for music preference, which can aid music educators in determining the best ways to present music to teenagers in the music classroom. The purpose of this article is to present a review of previous research in adolescent brain development, music preference, and the application of such research in the musical education of adolescent students.

Suvi Saarikallio et al., (2014) Musical behavior has been shown to reflect broader individual differences. However, despite the prevalence of music in the lives of young people little is known about the mechanisms through which adolescents’ musical behavior connects to their general socio-emotional behavior and adjustment. The current study focused on abilities of emotional communication and investigated whether adolescents’ abilities in both perceiving and expressing emotions through music would be reflective of their general abilities of socio-emotional communication and interaction, measured through empathy and conduct problems. Due to the lack of previous research
the study was mainly exploratory, but we expected accurate and congruent perception and expression of musical emotions to correlate positively with higher empathy and negatively with conduct problems. Sixty-one 14-year-olds (45 female, mean age 14.72) were given three music-related tasks that assessed emotion perception and emotion expression through music. Participants also filled in self-report scales for empathy (perspective taking and empathic concern) and conduct problems (externalized symptoms). The results showed that perspective taking was particularly related to accurate recognition of tenderness in music and congruent use of staccato articulation for the expression of anger through music. Empathic concern was particularly related to congruent use of slow tempo for expressing sadness and loud volume for expressing anger and also correlated with an overall tendency for intensified perception of fear in music. Externalized symptoms were particularly related to incongruent expression of sadness and anger through music: the use of staccato for expressing sadness and dull timbre for expressing anger. Overall, the results preliminarily support the idea of using musical behavior as an indicator of the broader socio-emotional communication abilities, which in turn play a major role in adolescent adjustment and wellbeing.

Thomas Schafer et al., (2013) Why do people listen to music? Over the past several decades, scholars have proposed numerous functions that listening to music might fulfill. However, different theoretical approaches, different methods, and different samples have left a heterogeneous picture regarding the number and nature of musical functions. Moreover, there remains no agreement about the underlying dimensions of these functions. Part one of the paper reviews the research contributions that have
explicitly referred to musical functions. It is concluded that a comprehensive investigation addressing the basic dimensions underlying the plethora of functions of music listening is warranted. Part two of the paper presents an empirical investigation of hundreds of functions that could be extracted from the reviewed contributions. These functions were distilled to 129 non-redundant functions that were then rated by 834 respondents. Principal component analysis suggested three distinct underlying dimensions: People listen to music to regulate arousal and mood, to achieve self-awareness, and as an expression of social relatedness. The first and second dimensions were judged to be much more important than the third a result that contrasts with the idea that music has evolved primarily as a means for social cohesion and communication. The implications of these results are discussed in light of theories on the origin and the functionality of music listening and also for the application of musical stimuli in all areas of psychology and for research in music cognition.

Dave Miranda (2012) There is an increasingly robust literature of recent research findings that support the developmental importance of music in adolescence. However, this intriguing literature is not familiar to many developmental psychologists, possibly due to a lack of communication among researchers and because of publication trends in developmental journals. This review aims at informing on current knowledge of how music listening can play a role in the psychosocial development of adolescents. To this end, three arguments are discussed in light of recent empirical research: music influences important aspects of adolescent development; music can represent a protective and a risk factor; and music can serve as an adjunct component in prevention and intervention.
Therefore, it is proposed how music is a developmental resource in adolescence. It is argued that research on the developmental role of music can create a window to the everyday psychological, social, and cultural needs of contemporary adolescents.

**Roberto Bresin and Anders Friberg (2011)** Many studies on the synthesis of emotional expression in music performance have focused on the effect of individual performance variables on perceived emotional quality by making a systematical variation of variables. However, most of the studies have used a predetermined small number of levels for each variable, and the selection of these levels has often been done arbitrarily. The main aim of this research work is to improve upon existing methodologies by taking a synthesis approach. In a production experiment, 20 performers were asked to manipulate values of 7 musical variables simultaneously (tempo, sound level, articulation, phrasing, register, timbre, and attack speed) for communicating 5 different emotional expressions (neutral, happy, scary, peaceful, sad) for each of 4 scores. The scores were compositions communicating four different emotions (happiness, sadness, fear, calmness). Emotional expressions and music scores were presented in combination and in random order for each performer for a total of $5 \times 4$ stimuli. The experiment allowed for a systematic investigation of the interaction between emotion of each score and intended expressed emotions by performers.

**Jonna K Vuoskoski and Tuomas Eerola (2011)** Neuroimaging studies investigating the processing of emotions have traditionally considered variance between
subjects as statistical noise. However, according to behavioural studies, individual differences in emotional processing appear to be an inherent part of the process itself. Temporary mood states as well as stable personality traits have been shown to influence the processing of emotions, causing trait- and mood-congruent biases. The primary aim of this study was to explore how listeners’ personality and mood are reflected in their evaluations of discrete emotions represented by music. A related aim was to investigate the role of personality in music preferences. An experiment was carried out where 67 participants evaluated 50 music excerpts in terms of perceived emotions (anger, fear, happiness, sadness, and tenderness) and preference. Current mood was associated with mood-congruent biases in the evaluation of emotions represented by music, but extraversion moderated the degree of mood-congruence. Personality traits were strongly connected with preference ratings, and the correlations reflected the trait-congruent patterns obtained in prior studies investigating self-referential emotional processing. Implications for future behavioural and neuroimaging studies on music and emotions are raised.

Vuokoski JK and Eerola (2011) TMost previous studies investigating music-induced emotions have applied emotion models developed in other fields to the domain of music. The aim of this study was to compare the applicability of music-specific and general emotion models – namely the Geneva Emotional Music Scale (GEMS), and the discrete and dimensional emotion models – in the assessment of music-induced emotions. A related aim was to explore the role of individual difference variables (such as personality and mood) in music-induced emotions, and to discover whether some
emotion models reflect these individual differences more strongly than others. One hundred and forty-eight participants listened to 16 film music excerpts and rated the emotional responses evoked by the music excerpts. Intra-class correlations and Cronbach alphas revealed that the overall consistency of ratings was the highest in the case of the dimensional model. The dimensional model also outperformed the other two models in the discrimination of music excerpts, and principal component analysis revealed that 89.9% of the variance in the mean ratings of all the scales (in all three models) was accounted for by two principal components that could be labelled as valence and arousal. Personality-related differences were the most pronounced in the case of the discrete emotion model. Personality, mood, and the emotion model used were also associated with the intensity of experienced emotions. Implications for future music and emotion studies are raised concerning the selection of an appropriate emotion model when measuring music-induced emotions.

**Miranda, D and Gaudreau, P. (2011)** The principal aim of this study was to determine if different profiles (types) of emotional reactions following music listening (happiness and sadness) characterized different levels of emotional well-being (i.e., positive and negative affects) in adolescence. The secondary aim was to examine relationships between social congruence in music tastes with friends or parents (i.e., sharing similar music tastes and having fewer conflicts about music) and emotional well-being in adolescence. This study's sample was composed of 316 adolescents ($M = 15.32$ and S.D. = 0.90 years of age; 172 girls and 144 boys). Cluster analysis identified three profiles: (1) 'emotionally-negative listeners' (medium happiness and higher sadness); (2)
‘emotionally-limited listeners’ (lower happiness and lower sadness); (3) ‘emotionally-positive listeners’ (higher happiness and lower sadness). Results indicated that ‘emotionally-negative listeners’ had less emotional well-being, that ‘emotionally-positive listeners’ had more emotional well-being, and that social congruence in music tastes with both friends and parents were related to more emotional well-being.

**Pediatrics (2009)** Music plays an important role in the socialization of children and adolescents. Popular music is present almost everywhere, and it is easily available through the radio, various recordings, the Internet, and new technologies, allowing adolescents to hear it in diverse settings and situations, alone or shared with friends. Parents often are unaware of the lyrics to which their children are listening because of the increasing use of downloaded music and headphones. Research on popular music has explored its effects on schoolwork, social interactions, mood and affect, and particularly behavior. The effect that popular music has on children's and adolescents' behavior and emotions is of paramount concern. Lyrics have become more explicit in their references to drugs, sex, and violence over the years, particularly in certain genres. A teenager's preference for certain types of music could be correlated or associated with certain behaviors. As with popular music, the perception and the effect of music-video messages are important, because research has reported that exposure to violence, sexual messages, sexual stereotypes, and use of substances of abuse in music videos might produce significant changes in behaviors and attitudes of young viewers. Pediatricians and parents should be aware of this information. Furthermore, with the evidence portrayed in these studies, it is essential for pediatricians and parents to take a stand regarding music lyrics.
Lin, P et al. (2008) investigated the effects of ZM on musical performance anxiety and musical performance quality. Nineteen participants were recruited from music conservatories and randomly assigned to either an 8-week meditation group or a wait-list control group. After the intervention, all participants performed in a public concert. Outcome measures were performance anxiety and musical performance quality. Meditation practiced over a short term did not significantly improve musical performance quality. The control group demonstrated a significant decrease in performance quality with increases in performance anxiety. The meditation group demonstrated the opposite effect—a positive linear relation between performance quality and performance anxiety. This finding indicates that enhanced concentration and mindfulness (silent illumination), cultivated by Chan practice, might enable one to channel performance anxiety to improve musical performance.

Saarikallio S and Erkkila J (2007) The aim of this study was the exploration and theoretical clarification of the role of music in adolescents’ mood regulation. The phenomenon was approached through an inductive theory construction. The data were gathered from eight adolescents by means of group interviews and follow-up forms, and were then analysed using constructive grounded theory methods. The analysis resulted in a theoretical model, which describes mood regulation by music as a process of satisfying personal mood-related goals through various musical activities. The general nature of the mood regulation is described, the goals and strategies of mood regulation are examined, and finally the specific role of music in mood regulation is discussed.
Bigand, E et al., (2006) Musically trained and untrained listeners were required to listen to 27 musical excerpts and to group those that conveyed a similar emotional meaning (Experiment 1). The groupings were transformed into a matrix of emotional dissimilarity that was analysed through multidimensional scaling methods (MDS). A 3-dimensional space was found to provide a good fit of the data, with arousal and emotional valence as the primary dimensions. Experiments 2 and 3 confirmed the consistency of this 3-dimensional space using excerpts of only 1 second duration. The overall findings indicate that emotional responses to music are very stable within and between participants, and are weakly influenced by musical expertise and excerpt duration. These findings are discussed in light of a cognitive account of musical emotion.

Juslin PN and Laukka P (2004) In this article, we provide an up-to-date overview of theory and research concerning expression, perception, and induction of emotion in music. We also provide a critique of this research, noting that previous studies have tended to neglect the social context of music listening. The most likely reason for this neglect, we argue, is that that most research on musical emotion has, implicitly or explicitly, taken the perspective of the musician in understanding responses to music. In contrast, we argue that a promising avenue toward a better understanding of emotional responses to music involves diary and questionnaire studies of how ordinary listeners actually use music in everyday life contexts. Accordingly, we present findings from an exploratory questionnaire study featuring 141 music listeners (between 17 and 74 years
of age) that offers some novel insights. The results provide preliminary estimates of the occurrence of various emotions in listening to music, as well as clues to how music is used by listeners in a number of different emotional ways in various life contexts. These results confirm that emotion is strongly related to most people's primary motives for listening to music.

**Suvi Laiho (2004)** The article presents a theoretical model of the psychological functions of music in adolescence. The model is a categorization of the psychological goals that direct and give meaning to musical activities in everyday life. It is based on the developmental tasks of adolescence and finds support from a wide range of studies from several disciplines. It consists of four categories: interpersonal relationships, identity, agency, and emotional field, which represent different areas of psychological functions that can be supported by engaging in music. Through promoting the satisfaction of these psychological aims music contributes substantially to adolescent development and mental health.

**Joel E. Resnicow et al., (2004)** Expression of emotion in music performance is a form of nonverbal communication to which people may be differentially receptive. The recently developed Mayer-Salovey-Caruso Emotional Intelligence Test assesses individual differences in the ability to identify, understand, reason with, and manage emotions using hypothetical scenarios that are conveyed pictorially or in writing. The test currently does not include musical or spoken items. We asked 24 undergraduates to
complete both that test and a listening test in which they tried to identify the intended emotions in performances of classical piano music. Emotional intelligence and emotion recognition in the music task were significantly correlated ($r = .54$), which suggests that identification of emotion in music performance draws on some of the same sensibilities that make up everyday emotional intelligence.

**Nawrot ES (2003)** Two studies investigated the development of the perception of emotion in music. In Study 1, preschool children and adults matched nine pieces of music to five photographed facial expressions (happy, sad, anger, fear and neutral). While children did not agree with the adult majority interpretation for most pieces, their pattern of responding to the music, both with photograph choices and spontaneous verbal labels, was similar to the adults. Important methodological differences between this and previous research could explain the inconsistencies. Study 2 used happy and sad music along with a dynamic visual display in an intermodal matching experiment with 5- to 9-month-old infants. Infants preferred the affectively concordant happy display but did not look longer to the affectively concordant sad display as predicted. Taken together, these results begin to explore how emotional perception from music may be due to innate perceptual predispositions together with learned associations that develop in childhood.

**Kelly D Schwartz and Gregory T Fouts (2003)** The purpose of this study was to examine the personality characteristics and developmental issues of 3 groups of adolescent music listeners: those preferring light qualities of music, those preferring
heavy qualities of music, and those who had eclectic preferences for music qualities. One hundred sixty-four adolescents completed an age-appropriate personality inventory and a systematic measure of music listening preference. The findings indicate that each of the 3 music preference groups is inclined to demonstrate a unique profile of personality dimensions and developmental issues. Those preferring heavy or light music qualities indicated at least moderate difficulty in negotiating several distinct domains of personality and/or developmental issues; those with more eclectic music preferences did not indicate similar difficulty. Thus, there was considerable support for the general hypothesis that adolescents prefer listening to music that reflects specific personalities and the developmental issues with which they are dealing.

Adrian C. North et al.,(2000) The study aims to determine the importance of music to adolescents in England, and investigates why they listen to and perform music. Sample. A total of 2465 adolescents (1149 males; 1266 females; 50 participants did not state their sex) between 13 and 14 years of age who were attending Year 9 at one of 22 secondary schools in the North Staffordshire region of England. A questionnaire asked participants (a) about their degree of involvement with musical activities; (b) to rate the importance of music relative to other activities; and (c) to rate the importance of several factors that might determine why they and other people of their age and sex might listen to/perform pop and classical music. Responses indicated that i) over 50% of respondents either played an instrument currently or had played regularly before giving up, and the sample listened to music for an average of 2.45 hours per day; ii) listening to music was
preferred to other indoor activities but not to outdoor activities; iii) listening to/playing pop music has different perceived benefits to listening to/playing classical music; iv) responses to suggested reasons for listening to music could be grouped into three factors; and v) responses to suggested reasons for playing music could be grouped into four factors. These results indicate that music is important to adolescents, and that this is because it allows them to (a) portray an ‘image’ to the outside world and (b) satisfy their emotional needs.

Mayumi Adachi and Sandra E. Trehub (1998) The study aims to determine the children's Expression of Emotion in Song. Children 4-12 years of age (N = 160) were recorded (audio and video) as they sang two versions of a familiar song, once in an attempt to make an adult listener happy and once to make her sad. Coding of gestural, vocal, linguistic and musical devices revealed that children used all of these means to portray contrastive emotions. Regardless of age or singing skill, children relied primarily on expressive devices used in interpersonal communication (e.g. tempo, facial expression) and made relatively little use of music-specific devices (e.g. legato). Moreover, they used a greater variety of expressive devices in their sad performances than in their happy performances. Finally, age-related changes reflected the influence of maturity, socialisation and musical knowledge.

Joseph G. Cunningham and Rebecca S. Sterling (1988) The development of the understanding of affective meaning in music was investigated. Subjects aged 4, 5, 6,
and 19 assigned verbal labels to musical segments previously determined by adults to be representative of one of four affects (happy, sad, angry, afraid). Analysis of correct interpretations and errors revealed a pattern of interactions among age, sex, and affect indicating that the ability to verbalize an understanding of affective meaning in music consistent with that of adult subjects is present during the preschool years. Age-related similarities in performance, as well as differences favoring both younger and older subjects, were observed and were discussed in relation to recent research in, and theories of, affective development and communication.

2.3 STUDIES RELATED TO MEDITATION AND PSYCHOLOGICAL VARIABLES OF ADOLESCENTS

Amit Kauts and Neelam Sharma (2009) assessed the effect of yoga and Meditation on academic performance of adolescent students. Out of eight hundred adolescent students; one hundred and fifty nine high-stress students and one hundred and forty two low-stress students were selected on the basis of scores obtained through Stress Battery. Experimental group and control group were given pre-test in three subjects, i.e., mathematics, science and social studies. A yoga module consisting of yoga asanas, pranayama, meditation and a value orientation program was administered on experimental group for 7 weeks. The experimental and control groups were post-tested for their performance on the three subjects mentioned above. The results show that the students, who practiced yoga performed better in academics. The study further shows that low-stress students performed better than high-stress students, meaning thereby that stress affects the students' performance. On the basis of research studies it can be
concluded that the Transcendental Meditation reduces stress, decreases trait anxiety, improves general health, academic performance and reduces blood pressure due to stress. A part of Mahayana Buddhism, Zen places an importance on experiencing life as it is, without any structure or belief system. Zazen is an important part of the process of experiencing this kind of „bliss”. The word 'Zen' derives from 'zazen', which means meditation. Zazen is part of the monastic Zen tradition, as is the giving of 'koans': riddle-like questions aimed at bringing the student face to face with what seems to be preventing direct and spontaneous perception. Another part of the living tradition is 'sanzen': a private interview with a Zen master. The master is a totally clear mirror, intrinsically able to show the nature of true being and to reflect the workings of the student's ego. Zen masters all have their own ways, quite unique to them and to the moment, of encouraging students to see into their true nature and resolve the apparent conflict generated by dualism (Haywood, 2004).

Beauchemin J et al. (2008) assessed thirty four adolescents diagnosed with learning disabilities (LD; defined by compromised academic performance). These children often have higher levels of anxiety, school related stress and less optimal social skills as compared with their typically developing peers. Previous health research indicates that meditation and relaxation training may be effective in reducing anxiety and promoting social skills. This pilot study used a pre-post no-control design to examine feasibility of attitudes toward and outcomes of a five-week mindfulness meditation intervention administered to thirty four adolescents diagnosed with LD. Post intervention survey responses overwhelmingly expressed positive attitudes toward the program. All
outcome measures showed significant improvement, with participants who completed the program demonstrating decreased state and trait anxiety, enhanced social skills and improved academic performance.

**Zylowska L et al. (2008)** in their study tested the feasibility of an 8-week mindfulness training program for adults and adolescents with ADHD (Attention deficit hyperactivity disorder). Twenty-four adults and eight adolescents with ADHD enrolled in a feasibility study of an eight week mindfulness training program. ADHD is a childhood-onset psychiatric condition that often continues into adulthood. The majority of participants completed the training and reported high satisfaction with the training. Prepost improvements in self-reported ADHD symptoms and test performance on tasks measuring attention and cognitive inhibition were noted. Improvement anxiety and depressive symptoms were also observed.

**Colbert, R. (2008)** in a study found that one hundred and six at-risk adolescents in three high schools reduced higher levels of stress, anxiety, hyperactivity and emotional problems when practicing the Transcendental Meditation technique for four months at school, as compared with controls. Research has demonstrated that TM produces improvements in mental health, including reduction of various forms of psychological distress, such as depression, anxiety, hostility and emotional instability (Abrams & Siegel, 1978; Aron et al., 1980; Brooks & Scarano, 1985; Davis,1986; Eppley et al.,1989; Haratani & Hemmi,1990). TM has been shown to reduce aggression (Shapiro,1976) and
to increase overall relaxation in adults (Alexander et al., 1993). The above studies show that TM is very effective in reducing emotional instability, aggression and emotional problems. It helps in enhancing self-esteem, emotional competence and positive emotional state. Meditation is the attainment of a restful yet fully alert physical and mental state practiced by many as a self-regulatory approach to emotion management.

**Paul, G et al. (2007)** designed a curriculum to assist sixty four students in developing and practicing a stress-management technique. It was implemented on a regular basis from June 2004 to April 2006. Students participated in Deep Breathing Meditation exercises in two classes and completed pre-test, post-test and follow-up surveys each academic year. Students reported having perceptions of decreased test anxiety, nervousness, self-doubt and concentration loss, using the technique outside of the two classes and believing it helped them academically and would help them as a physician. The Deep Breathing Meditation technique was successfully implemented each academic year, as it provided students with a promising solution for meeting challenging academic and professional situations.

**Jain, S et al. (2007)** examined the effects of one month mindfulness meditation versus somatic relaxation training as compared to a control group in eighty three students reporting distress. Results reveal that both meditation and relaxation groups experienced significant decreases in distress as well as increases in positive mood states over time, compared with the control group.
Orme-Johnson D.W (2006) in a pilot study with twelve subjects practicing Transcendental Meditation for thirty years showed a 40–50% lower brain response to stress and pain compared to twelve healthy controls. Further, when the controls learned and practiced Transcendental Meditation for five months, their brain responses to stress and pain also decreased by a comparable 40-50%.

Rosaen, C. and Benn, R. (2006) conducted a study on fifth grade students with an objective to examine the effects of TM on students emotional disposition and competence. They were randomized into two groups (n = 44). One group received instruction in TM. These students practiced the TM technique twice a day for ten minutes as a group in the school gym. Control group students had unstructured time in their classrooms during these daily time-periods. After three months the results demonstrate that the instruction and practice of TM in a school setting can significantly affect fifth grade students emotional states and ways that they approach everyday situations.

Gaur, B. P et al. (2004) in a pilot study investigates the effect of Meditation (P.M.) on management of stress in teenage students. For this investigation, a simple pre and post-experimental design was adopted. A sample of twenty four boys and girls were the subjects with mean age of fourteen years, drawn from various parts of Mumbai. The results obtained reveal that due to the practice of P.M. for sixteen days, the subjects experienced a reduction in stress in the areas of academy, family and achievement. They
became more self-assured and confident. In the area of academy there was a reduction in their frustration level ($p<0.05$) and pressure experienced ($p<0.01$). Their achievement frustration and anxiety were also reduced ($0.05$ and $0.01$ level of confidence) as well as the existential pressure ($p<0.01$), due to P.M. practice.

**Manjunath N K and Shirley Telles (2004)** compared the performance scores of children (aged 11 to 16 years) in verbal and spatial memory tests for two groups ($n=30$, each), one attending a yoga camp and the other a fine arts camp. Both groups were assessed on the memory tasks initially and after ten days of their respective interventions the yoga group showed a significant increase of 43% in spatial memory scores (Multivariate analysis, Tukey test), while the fine arts and control groups showed no change. The results suggest that yoga practice including physical postures, yoga breathing, meditation and guided relaxation improved delayed recall of spatial information.

**Gavin, K. (2003)** investigated the effects of TM practice on social emotional development in early adolescence. African-American sixth grade grader (n=83) enrolled at two charter schools participated in the study. In one school, students and teachers learned and practiced meditation two times a day. Four months after students had been instructed in TM, researchers administered scales over a three-week period. Scales assessed school climate and indices of social-emotional development: emotional competence, self-esteem, positive affectivity, anxiety, aggression and loneliness. TM
students reported a significantly higher elevation in positive emotional state mood over
time and decrease in negative affect immediately after meditation practice.

Slovacek, S. P et al. (2003) conducted a study of four hundred and five students
and eighteen teachers with mindfulness practices. The participants appeared to have
improved students self-esteem, behavior (fewer discipline referrals), physical fitness and
academic performance.

Barbara and Carde (1999) in a study compared perceived stress, cognitive and
emotional differences between two groups of Buddhist mindfulness meditators. Nineteen
beginning and twenty-four advanced meditators carried electronic pagers for five days and
responded to daily random signals by completing an Experience Sampling form (ESF)
containing items related to the dependent variables. As compared with beginners,
advanced practitioners reported greater self-awareness, positive mood and acceptance.
Greater stress lowered mood and self-acceptance in both groups, but the deleterious effect
of stress on acceptance was more marked for the beginners.

meditation training for student-teachers and reported significant reduction in stress
symptoms as compared to the control group. The results of the studies clearly demonstrate
the benefits to schools of incorporating mindfulness training for both
students and faculty alike. There was improvement in behavior, physical and emotional health, ability to focus and improved learning.

**Shauna L. Shapiro et al. (1998)** conducted an eight-week meditation-based stress reduction on seventy three premedical and medical students using an intervention group and a wait-list control group and showed that the intervention can effectively reduce self-reported state and trait anxiety, reduce reports of overall psychological distress including depression, increase scores on overall empathy levels and increase scores on a measure of spiritual experiences assessed at termination of intervention. These results were observed during the exam period.

**Alexander, C. N (1995)** reviewed literature comparing relaxation and meditation techniques. Meta-analysis shows transcendental meditation (TM) to be significantly more effective than other forms of relaxation or meditation in (i) reducing psycho-physiological arousal (ii) reducing stress (iii) increasing positive mental health on measures of self esteem and (iv) reducing alcohol, nicotine, and illicit drug use relative to standard treatment and prevention programmes. Randomized controlled traits show that the TM technique significantly reduced hypertension and mortality in the elderly compared with a mental or physical relaxation technique.

**Disayavanish (1995)** assessed pre/post vipassana mediation retreat on an experimental group of hundred meditators and a control group of fifty non-meditators. Results demonstrated that as compared to the control group, participants in the meditation
program showed reduced levels of psychopathology: obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation and psychoticism.

Charles N. Alexander et al. (1993) conducted a three-month prospective study to evaluate the effects of the Transcendental Meditation (TM) technique on stress reduction, health and employee development in two settings in the automotive industry. Employees who learned TM were compared to controls similar in worksite, job position, demographic and pre-test characteristics. Regular meditators improved significantly more than controls (with irregular meditators scoring in between) on multiple measures of stress and employee development including: reduced physiological arousal (measured by skin conductance levels) during and outside TM practice, decreased trait anxiety, job tension, insomnia and fatigue, cigarette and hard liquor use, improved general health and enhanced employee effectiveness, job satisfaction and work/personal relationships. Principal components analysis identified three factors underlying this wide range of improvements through TM: “occupational coherence,” “physiological settledness,” and “job and life satisfaction.” The “effect size” of TM in reducing skin conductance, trait anxiety, alcohol/cigarette use and in enhancing personal development (relative to the control condition) in these business settings was substantially larger than for other forms of meditation and relaxation reports.

Telles, S et al. (1993) assessed two groups of forty-five children each (age ranged from 9 to 13 years). They were on a steadiness test, at the beginning and again at
the end of a ten-day period during which one group received training in Yoga, while the other group did not. The steadiness test required insertion of and holding for fifteen seconds a metal stylus without touching the sides of holes of decreasing sizes in a metal plate. The contacts were counted as “errors.” During the ten-day period, one group (the “Yoga” group) received training in special physical postures (asanas), voluntary regulation of breathing (pranayama), maintenance of silence, as well as visual focusing exercises (tratakas) and games to improve the attention span and memory. The other group (control) carried out their usual routine. After ten days, the “Yoga” group showed a significant (Wilcoxon’s paired signed-ranks test) decrease in errors, whereas the “control” group showed no change.

Wood, C (1993) assessed the effects of three different procedures that is relaxation, visualization and yogic breathing and stretch (pranayama) on perceptions of physical and mental energy and on positive and negative mood states in a group of normal volunteers (N = 71, age range 21-76). Pranayama produced a significantly greater increase in perceptions of mental and physical energy and feelings of alertness and enthusiasm than the other two procedures (P < 0.5). Relaxation made subjects significantly more sleepy and sluggish immediately after the session than pranayama (P < 0.05). Visualization made them more sluggish but less content than pranayama (P < 0.05) and more upset than relaxation after the second session (P < 0.05). Thus, a thirty minutes programme of yogic stretch and breathing exercises which is simple to learn and which can be practiced even by the elderly had a markedly ‘invigorating’ effect on perceptions of both mental and physical energy and increased high positive mood.
Green, A and Hiebert B (1988) in a study on twenty four college students who learned either a meditation or a cognitive self-observation procedure for three consecutive training sessions and practiced the method daily, concluded that both groups showed reliable increases in dimensions of selfactualization (measured by the Personal Orientation Inventory) and decreases in common stress-related symptoms (measured by the Symptoms of Stress Inventory). There were no differential treatment effects.

Throll, D. A. (1982) administered the Eysenck Personality Inventory, the State-Trait-Anxiety-Inventory and two questionnaires on health and drug usage to thirty nine students before they learned Transcendental Meditation (TM) or Progressive Relaxation (PR). All students were tested immediately after they had learned either technique and then re-tested 5, 10, and 15 weeks later. There were no significant differences between groups for any of the psychological variables at pre-test. However, at post-test the TM group displayed more significant and comprehensive results (decreases in Neuroticism/Stability Extraversion/Introversion, and drug use) than did the PR group. Both groups demonstrated significant decreases in state and trait anxiety. The more pronounced results for meditators were explained primarily in terms of the greater amount of time that they spent on their technique, plus the differences between the two techniques themselves.
2.4 SUMMARY OF RELATED LITERATURE

The investigator reviewed several journals and research articles which are presented and classified into three broad areas namely, exercise, meditation and music. From the reviewed studies it was inferred that there was scope for further research in selected psychological variables.

Based on the experience the investigator gained and selected the suitable methodology to be followed in this research, which is presented in Chapter III.