The Effects of Sandplay Therapy on Anxiety, Interpersonal Stress, and Salivary Cortisol Levels of University Students with ADHD Tendencies

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The purpose of this study was to investigate the effects of sandplay therapy on anxiety, interpersonal stress, and the cortisol changes of university students with Attention Deficit Hyperactivity Disorder (ADHD) tendencies. Eight university students participated in sandplay therapy for ten weeks. The data was analyzed using the Wilcoxon Signed Rank Test. This study found there were significant differences in terms of the decreases in anxiety, interpersonal stress, and salivary cortisol. It also suggests that sandplay therapy has significantly positive effects on the anxiety, interpersonal stress, and salivary cortisol levels of students with ADHD tendencies who are experiencing pressures and conflicts in university life.

Keywords Anxiety, Interpersonal Stress, Salivary Cortisol, ADHD Tendencies, Sandplay Therapy, University Students

INTRODUCTION

Today’s university students in Korea have many pressures such as tuition fees, lack of job opportunities, an uncertain future after graduation, low-paying part-time jobs, getting good grades, and credit default. In the case of university students with Attention Deficit Hyperactivity Disorder (ADHD) tendencies, these tendencies turn up in the form of maladjustments in daily life because they no longer benefit from the structured academic environment that they had in high school. Some of the tendencies deteriorate into typical secondary problems, the emotional problem of anxiety, and social maladjustment that was caused by the lack of interpersonal techniques (Jang, 2004; Jang, 2010; Kim, 2009).

It is known the prevalence rate of ADHD among adults is about 2-3% when we consider that 50-60% of the children who were diagnosed as ADHD patients retain their major disorders or the symptoms that meet the general criteria for ADHD until adulthood (Barkley, 2005; Conners, Erhardt & Sparrow, 1999; Weiss & Hechtman, 1993). However, some researchers have pointed out that studies on how to measure, diagnose, and effectively treat adults’ ADHD is still insufficient, compared to that on the ADHD of children (Hope & Koski, 2005).

Adults with ADHD tendencies feel chronic anxiety and have difficulty in maintaining interpersonal relationships as they have continuously received negative feedback from their peers, family members, and teachers since childhood (Marsh & Williams, 2004). Nevertheless, previous research on adults with ADHD tendencies seldom intervened therapeutically in the problems of anxiety and interpersonal conflicts from which they suffered.

It is known that cortisol hormone levels are more effective in indicating stress levels than the self-reporting measure of stress. That is, the correlation between the cortisol hormone and stress in life, turned out to be significantly high upon being analyzed (Park & Kim, 2007).

The application of sandplay therapy, which is useful in helping university students with ADHD to handle their own emotional...
problems, had a positive influence on improving ADHD tendencies and on reducing depression (Kim, 2009). Furthermore, sandplay therapy had positive effects on the depression, self-esteem, and interpersonal relations of adults with ADHD tendencies (Jang, 2010), and it was effective in reducing cortisol levels (Kim et al., 2012). Thus, this study examines the influence that sandplay therapy exerts on the anxiety and interpersonal stress of ADHD university students and examines what effects that sandplay therapy has on changes in cortisol levels that assess stress neurophysiologically, as a response variable.

Adults with ADHD Tendencies
Attention deficit hyperactivity disorder is a typical psychological disorder in childhood that has inattention, impulsivity, and hyperactivity as its presenting symptoms (Cantwell, 1996). Initial research treated ADHD only as a childhood disorder on the assumption that the presenting symptoms of ADHD would improve as children grew older. However, longitudinal studies on ADHD children in the 1980s and early 1990s discovered that 70-80% of them stayed as patients until their adolescence and 50-60% of them grew to be adults with ADHD (Barkley, 2005; Conners et al., 1999; Weiss & Hechman, 1993). It is estimated in recent research that the prevalence rate of ADHD in adulthood would be 4.4% and 36.3% since ADHD children remain as patients even after adulthood (Kessler et al., 2005; Kessler et al., 2006). Similarly, it was reported that 30-50% of adults who were diagnosed as ADHD patients had retained the symptoms since their childhood (Barkley, 2005).

In terms of progression from childhood to adulthood, the inattentive symptoms of ADHD remain constant throughout adulthood. However, the symptoms of impulsivity and hyperactivity do decrease as children grow older and the activity pattern in adulthood settles at an appropriate level. Thus, the abnormal behavior shows a tendency to be gradually transformed to internal conduct and their behavior problems start to be attributed to cognitive disorders (Jang, 2004; Biederman, Mick, & Faraone, 2000; Hart et al., 1995; Marsh & Williams, 2004; Willoughby, 2003).

It is hard for adults with ADHD to maintain a job as they have difficulty in maintaining concentration while working. It is commonly asserted that such inattentiveness causes them to exhibit low self-esteem and to suffer from depression and anxiety (Weiss & Hechtman, 1993) and leads to trouble in interpersonal relations (Conners et al., 1999; Weiss, 1992). Furthermore, Broun (1993) has maintained that adults with ADHD develop low self-esteem because they have failed repeatedly in daily life, met with frustration due to ADHD symptoms, and their low self-esteem leads to various emotional problems such as anxiety and depression. Thus, it was found that the typical problems of adults with ADHD tendencies appeared in the form of interpersonal problems, severe emotional problems, incompetency in learning and job performance, antisocial behavior, and anxiety.

The Anxiety of University Students with ADHD Tendencies
Anxiety is divided into two concepts: state and trait anxiety (Spielberg et al., 1970). State anxiety indicates the transitory emotional state of apprehension in specific situations and that trait anxiety, a personal disposition towards anxiety, is maintained through one’s life with no changes. Anxiety in childhood is sometimes shown in the form of headaches or stomach aches and could be the reason for inattentiveness or distractedness in children. It is not easy to distinguish between ADHD and anxiety disorder, which coexists with ADHD, because a large portion of ADHD children (25-35% of the total number) also have anxiety disorder, and ADHD symptoms overlap with the symptoms of anxiety disorder. However, it is necessary to distinguish between ADHD and anxiety disorder as anxiety is among the side effects of ADHD medication (Kim, 2008).

The ADHD children who also have anxiety disorder tend to feel more stress and experience more difficulties in academic performance and social situations than ADHD children without anxiety disorder. As seen in the case of children, the high proportion of university students with ADHD also has anxiety disorder. Thus, 33% of anxiety disorder patients meet the diagnosis criteria for ADHD and such anxiety disorder influences negatively on the socially maladjusted behavior of ADHD adults (Conners et al., 1999).

The Interpersonal Stress of University Students with ADHD Tendencies
School-aged ADHD children are apt to interact negatively with peers and teachers as they try to dominate the classroom environment and interrupt class activity (Lee & Bang, 1998). In this process of interaction, the ADHD children show social withdrawal, failure to maintain smooth interpersonal relations with peers, and rejection by peers. This negative interaction is known not to be limited only to childhood but to continue through the period of university life (Barkley, 1998). It was noticed that the behavioral and emotional problems, difficulties in interpersonal relations, academic impairment, and social problems that used to exist in childhood persist into adolescence and the period of university life (Barkley et al., 1990; O’Donnell, McCann & Pluth, 2001; Bussing, Zima & Perxivien, 2000).

Impulsivity is an attribute that makes one easily get angry and behave in unpredictable ways. It has been shown in research on university students with ADHD that the more serious their symptoms, the more easily they lost their temper and the more they expressed their anger in a socially intolerable way (Richards, Deffenbacher, & Rosen, 2002). Moreover, it was shown that uni-