請在閱讀本期刊後回答下列問題：

1. 請摘要說明本篇文章之研究目的、研究方法、研究結果(發現) 為何? 60 %

2. 試說明為何本篇文章需選用 Cronbach's alph， multivariate analysis of variance (MANOVA) Kruskal–Wallis ANOVA及Mann–Whitney U-test as post hoc tests來分析資料? 40%

1. Introduction

Self-concept may be defined as the totality of perceptions that each person has of himself. This self-identity plays an important role in the psychological functioning of everyone. Self-concept refers to a multidimensional concept, which involves neurophysiologic as well as psychological components. Sometimes, a distinction is made between self-concept which is what one thinks about one's self, and self-esteem which is the positive or negative evaluation of one's self (how one feels about himself). Marsh, Parada and Ayotte (2004), however, state that researchers have commonly used the terms selfconcept and self-esteem interchangeably in mental health research.

There are several theories of self-concept and quite a lot of instruments (Sypsa & Simons, 2008) that are based on these models for different populations. The most extensively validated model, until now, is the multidimensional-hierarchical model, first developed by Shavelson, Hubner and Stanton (1976) and further expanded by other researchers (e.g. Marsh, Richards, Johnson, Roche, & Termayne, 1994). Multidimensional recognition of the self gives the opportunity to examine physical self as a distinct entity. Body-concept is also viewed as multidimensional (Fox, 1997; Marsh et al., 1994). The hierarchical structure of physical self-concept suggests a top-to-bottom hierarchy, where global self-concept is at the apex and actual behavior is at the bottom.

Several studies have demonstrated differences in levels of self-concept and body-concept between boys and girls (Demarest & Allen, 2000; Garner, 1997; Kearny-Cooke, 1999; Maı̈ano, Ninot, & Bilard, 2004; Muth & Cash, 1997; Smolak, 2004). Adolescent girls tend to evaluate their physical as well as their intellectual capacities in a more negative way and put more attention to their appearances (Kearny-Cooke, 1999; Muth & Cash, 1997). Smolak (2004) mentioned that girls have more difficulty with being overweight while boys would like to weigh more by having more muscles. On the other hand, girls think that boys like thin girls and boys think that girls like well-muscled boys (Demarest & Allen, 2000). A significant number of studies of adolescents have shown that boys have higher perceptions concerning their physical abilities than girls (Asci, 2002; Bowker, Gadbois, & Cornock, 2003; Chan, Au, Chan, Kwan, & Yiu, 2003; Crocker, Eklund, & Kowalski, 2000; Faria, 2001; Raudsepp & Liblik, 2002; Rudisill, Mahar, & Meany, 1993; Shapka & Keating, 2005). Nevertheless, girls' general self-concept does not differ from that of boys possibly due to perceptions in other areas of self-concept that compensate for the lower physical aspect (Bowker et al., 2003).

A number of studies have examined the relationships between self-concept and different psychiatric disorders such as conduct disorders (Maı̈ano, Ninot, Morin, & Bilard, 2007), post traumatic stress disorder (Saigh, Yasuib, & Oberfield, 2008), anorexia nervosa (Jacobi, Paul, de Zwann, Nutzinger, & Dahme, 2004; Probst, Pieters, & Vanderlinden, 2001), depression and anxiety (Sukumaran et al., 2003). In these studies, low self-concept has been cited as a major contributory factor for both the onset and the persistence of the disorders. In a systematic review, Ekeland, Heian and Hagen (2005) indicated a positive effect of physical activity on self-concept in depression, anxiety and behavioral problems. But the association between actual and perceived motor competence remains rather low in psychiatric adolescents (Simons, Sypsa, & Vandenbussche, 2008). Most of those studies used a one-dimensional approach of self-concept (e.g., Piers–Harris self-concept scale, Piers & Herzberg, 2002), or the self-esteem of a certain group is compared with the norm. The present study aims to contribute to the understanding of self-concept among adolescents with psychiatric conditions. Building on the work of previous studies, this current research utilized a multi-dimensional approach at examining self-concept and comparisons are made between two participant groups (clinical and non-clinical).

On the basis of what has been established in the literature the hypotheses for the present study are: (i) boys and girls will differ in overall self-concept and in general physical self-concept, (ii) and the clinical group will have lower feelings about themselves then the matched non-clinical group, (iii) there will be no discrepancy in self-concept among adolescents staying for a short or long period in institutional psychiatric care, and (iv) there will be differences in self-concept depending on the psychiatric diagnosis.

## 2. Method

### 2.1. Participants

The clinical group consisted of 103 adolescents, admitted during the last four years at the University Psychiatric Centre-KUL, Campus Leuven, Belgium. Their mean age was 14 years and 6 months (SD = 1 year and 4 months); 44 of them were boys (mean age 14 years and 4 months, SD = 1 year and 6 months) and 59 were girls (14 years and 9 months, SD = 1 year and 3 months). The group consisted of two subgroups where in the first subgroup (N = 42) consisted of those who were staying in the hospital for at least 3 months in a residential therapeutic psychiatric unit (long stay). The second subgroup (N = 61) consisted of those who were at the urgent psychiatric unit were they stayed for a maximum of five days (short stay). The clinical diagnosis was determined by a multidisciplinary team following the DSM IV criteria. The entire group consisted of 22 adolescents with autism spectrum disorder (ASS), 1 with reactive attachment disorder, 28 with depression, 9 with posttraumatic stress syndrome (PTSS), 12 with identity disorder, 3 with attention deficit hyperactivity disorder (ADHD), 3 with anorexia nervosa (AN), 8 with oppositional behavior disorder, 2 with the syndrome of Gilles de la Tourette and 5 with adaptation disorder.

The data of the clinical group were matched according to gender and age to the data of a non-clinical group who were randomly selected from a community sample of 1007 Flemish speaking non-clinical adolescents. Mean age of both groups was exactly the same and no significant difference in age was found between boys and girls.

### 2.2. Instrument

The adolescents were asked to complete the Physical Self-Description Questionnaire (PSDQ, Marsh et al., 1994), which was translated for the purpose of this study using a back to back translation procedure (Brislin, 1970). The PSDQ is based on the hierarchical-multidimensional model of self-concept and assesses participants' physical self-concept through the measurement of 70 items divided over 11 scales as summarized in Table 1. These scales consist of the following: global selfesteem (8 items), global physical self-concept (6 items), strength (6 items), body fat (6 items), activity (6 items), endurance/fitness (6 items), sport competence (6 items), coordination (6 items), health (6 items), appearance (6 items) and flexibility (6 items). Response possibilities range on a 6-point scale, where 1 is not true and 6 is very true. The sum of scores (raw data) for each scale was used for the calculation of the different components. The instrument was designed for adolescents aged 12 years and older. A number of studies support the reliability and validity of the PSDQ (Marsh et al., 1994; Marsh, Marco, & Abcy, 2002; Richards & Marsh, 2006).

### 2.3. Statistical analysis

To analyze the data, Statistica 9 (2010) was used. The internal consistency was checked on the data of the Flemish group by using Cronbach's alpha. Data were analyzed by multivariate analysis of variance (MANOVA) in which self-concept scores were dependent variables, while clinical versus non-clinical groups and gender were between-group independent variables. In the second analysis, long term versus short time group, and gender were the independent variables. Differences in self and body concept for the different diagnostic groups were examined by means of Kruskal–Wallis ANOVA, with Mann–Whitney U-test as post hoc tests.

## 3. Results

### 3.1. Internal consistency

The values for the Flemish non-clinical group varied from alpha 0.80 to 0.95, with median of alpha = 0.89. The values for the Flemish clinical group varied from 0.80 to 0.96, with median of alpha = 0.89, indicating that the use of the scales is justified in a group of Flemish adolescents with psychiatric disorders (see Table 2).

### 3.2. Differences between results of the clinical and non-clinical group

A 2*2*11 MANOVA revealed no significant interaction effect Wilks' lambda = 0.928 (F(11,192) = 1.359, p = 0.195). Significant main effects were found for gender Wilks' lambda = 0.747 (F(11,192) = 5.918, p < 0.000001) and for clinical versus non-clinical group Wilks' lambda = 0.693 (F(11,192) = 7.723, p < 0.00001). Follow-up univariate analysis indicated significant gender differences in self-esteem and general physical self-concept, and most of the other domains with exception for flexibility, with boys having higher scores then girls (see Table 3). Follow-up univariate analysis indicated significant differences in the clinical versus the non-clinical group for all scales except for strength and flexibility, with the non-clinical group having significantly higher scores (see Table 4).

### 3.3. Differences between self-esteem and physical-concept of adolescents on a long stay and short stay psychiatric unit

A 2*2*11 MANOVA revealed no significant interaction effect Wilks' lambda = 0.926 ($F_{(11,89)}$ = 0.678, p = 0.783). A significant main effect for gender Wilks' lambda = 0.731 ($F_{(11,89)}$ = 2.963, p < 0.002), and a non-significant main effect for long stay versus short stay Wilks' lambda = 0.138 ($F_{(11,89)}$ = 1.114, p < 0.36) were found. Follow-up univariate analysis indicated significant gender differences for all the scales, with boys having higher scores then girls (see Table 5). Follow-up univariate analysis indicated no significant differences in the long stay versus the short stay group (see Table 6).

### 3.4. Differences in self-concept and physical self-concept in different diagnostic groups

To generate a more in-depth analysis of the clinical group, differences according to psychiatric diagnosis were examined. Results are outlined in Table 7. Significant differences were found between the results of the ten diagnostic groups for health, strength and flexibility.

**Table 1**
Overview of the different aspects of the PSDQ.

| Factor | Description |
| --- | --- |
| Self-esteem | Global self-esteem |
| General physical self-concept | Global physical self-concept |
| Strength | Perceived physical strength |
| Body fat | Perceived body fat |
| Physical activity | Levels of physical activity in which one has engaged |
| Endurance | Perceived physical endurance/fitness |
| Sport competence | Perceptions of one's own sporting ability |
| Coordination | Perceived physical coordination |
| Health | Perceptions of one's own physical health |
| Appearance | Perceptions of own physical appearance |
| Flexibility | Perceived physical flexibility |

**Table 2**
Overview of the alpha-values for the different scales of the PSDQ on the clinical and non-clinical group.

| Scales PSDQ | Cronbach alpha value | |
| --- | --- | --- |
| | Non-clinical group (N = 103) | Clinical group (N = 103) |
| Self-esteem | .89 | .87 |
| General physical self-concept | .93 | .96 |
| Health | .80 | .80 |
| Coordination | .81 | .80 |
| Physical activity | .89 | .86 |
| Body fat | .88 | .88 |
| Appearance | .91 | .89 |
| Sport competence | .95 | .94 |
| Strength | .85 | .90 |
| Flexibility | .90 | .90 |
| Endurance | .93 | .90 |

**Table 3**
ANOVA results for gender and both groups.

| Scales PSDQ | Gender | | Clinical versus non-clinical | |
|---|---|---|---|---|
| | F-value (1,202) | p-value | F-value (1,202) | p-value |
| Self-esteem | 5.027 | 0.03 | 44.966 | 0.0000001 |
| General physical self-concept | 20.756 | 0.000009 | 16.372 | 0.00007 |
| Health | 13.043 | 0.0004 | 4.852 | 0.03 |
| Coordination | 6.860 | 0.009 | 7.705 | 0.006 |
| Physical activity | 13.470 | 0.0003 | 10.172 | 0.002 |
| Body fat | 11.148 | 0.001 | 9.236 | 0.003 |
| Appearance | 6.435 | 0.02 | 10.778 | 0.001 |
| Sport competence | 22.682 | 0.000004 | 0.958 | 0.329 |
| Strength | 5.409 | 0.02 | 0.477 | 0.490 |
| Flexibility | 1.801 | 0.181 | 1.383 | 0.240 |
| Endurance | 31.924 | 0.0000001 | 8.436 | 0.004 |

**Table 4**
Mean and standard deviations for the clinical (N = 103) and non-clinical (N = 103) group on the PSDQ.

| Scales PSDQ | Clinical group (N = 103) | | Non-clinical group (N = 103) | |
|---|---|---|---|---|
| | Mean | SD | Mean | SD |
| Self-esteem | | | | |
| Boys (N = 44) | 4.01 | 1.11 | 4.53 | 1.14 |
| Girls (N = 59) | 3.16 | 1.34 | 4.70 | 0.68 |
| General physical self-concept | | | | |
| Boys | 4.22 | 1.69 | 4.46 | 1.22 |
| Girls | 2.74 | 1.50 | 4.12 | 1.25 |
| Health | | | | |
| Boys | 4.62 | 1.09 | 4.79 | 0.82 |
| Girls | 3.98 | 1.05 | 4.43 | 0.96 |
| Coordination | | | | |
| Boys | 4.08 | 1.06 | 4.22 | 0.99 |
| Girls | 3.42 | 1.20 | 4.10 | 0.91 |
| Physical activity | | | | |
| Boys | 3.69 | 1.57 | 4.22 | 1.55 |
| Girls | 2.85 | 1.34 | 3.59 | 1.28 |
| Body fat | | | | |
| Boys | 4.44 | 1.55 | 4.99 | 1.15 |
| Girls | 3.75 | 1.51 | 4.38 | 1.29 |
| Appearance | | | | |
| Boys | 3.70 | 1.48 | 3.84 | 1.29 |
| Girls | 2.81 | 1.28 | 3.83 | 1.02 |
| Sport competence | | | | |
| Boys | 4.18 | 1.32 | 4.03 | 1.46 |
| Girls | 2.92 | 1.49 | 3.44 | 1.26 |
| Strength | | | | |
| Boys | 3.95 | 1.52 | 3.74 | 1.14 |
| Girls | 3.20 | 1.31 | 3.66 | 1.09 |
| Flexibility | | | | |
| Boys | 3.92 | 1.32 | 3.80 | 1.29 |
| Girls | 3.33 | 1.46 | 3.89 | 1.16 |
| Endurance | | | | |
| Boys | 3.76 | 1.37 | 4.07 | 1.20 |
| Girls | 2.50 | 1.40 | 3.25 | 1.22 |

**Table 5**
ANOVA results for gender and both psychiatric settings.

| Scales PSDQ | Gender | | Long stay versus short stay | |
|---|---|---|---|---|
| | $F$-value (1,99) | $p$-value | $F$-value (1,99) | $p$-value |
| Self-esteem | 10.538 | 0.002 | 0.043 | 0.836 |
| General physical self-concept | 19.646 | 0.00002 | 0.069 | 0.793 |
| Health | 7.173 | 0.009 | 1.557 | 0.22 |
| Coordination | 7.290 | 0.008 | 0.739 | 0.392 |
| Physical activity | 7.236 | 0.008 | 1.512 | 0.221 |
| Body fat | 6.05 | 0.02 | 0.002 | 0.962 |
| Appearance | 8.794 | 0.004 | 0.301 | 0.584 |
| Sport competence | 17.614 | 0.00006 | 0.461 | 0.499 |
| Strength | 69.256 | 0.014 | 0.005 | 0.945 |
| Flexibility | 3.928 | 0.05 | 0.117 | 0.733 |
| Endurance | 19.078 | 0.00003 | 0.175 | 0.676 |


**Table 6**
Mean and standard deviations for the long stay and short stay group on the PSDQ.

| Scales PSDQ | Long stay group ($N = 42$) | | Short stay group ($N = 61$) | |
|---|---|---|---|---|
| | Mean | SD | Mean | SD |
| Self-esteem | | | | |
| Boys ($N = 44$) | 3.96 | 1.10 | 4.05 | 1.14 |
| Girls ($N = 59$) | 3.27 | 1.26 | 3.08 | 1.40 |
| General physical self-concept | | | | |
| Boys | 4.11 | 1.73 | 4.30 | 1.69 |
| Girls | 2.95 | 1.74 | 2.59 | 1.31 |
| Health | | | | |
| Boys | 4.27 | 1.18 | 4.84 | 0.99 |
| Girls | 4.00 | 1.20 | 3.96 | 0.95 |
| Coordination | | | | |
| Boys | 4.10 | 1.22 | 4.06 | 0.97 |
| Girls | 3.63 | 1.37 | 3.27 | 1.06 |
| Physical activity | | | | |
| Boys | 3.67 | 1.70 | 3.70 | 1.51 |
| Girls | 3.28 | 1.44 | 2.53 | 1.19 |
| Body fat | | | | |
| Boys | 4.67 | 1.67 | 4.29 | 1.48 |
| Girls | 3.51 | 1.64 | 3.92 | 1.41 |
| Appearance | | | | |
| Boys | 3.43 | 1.52 | 3.87 | 1.46 |
| Girls | 2.89 | 1.17 | 2.75 | 1.37 |
| Sport Competence | | | | |
| Boys | 3.93 | 1.36 | 4.33 | 1.30 |
| Girls | 2.92 | 1.65 | 2.91 | 1.38 |
| Strength | | | | |
| Boys | 3.87 | 1.67 | 3.99 | 1.45 |
| Girls | 3.29 | 1.49 | 3.13 | 1.19 |
| Flexibility | | | | |
| Boys | 3.80 | 1.35 | 3.99 | 1.32 |
| Girls | 3.32 | 1.52 | 3.33 | 1.43 |
| Endurance | | | | |
| Boys | 3.65 | 1.65 | 3.83 | 1.20 |
| Girls | 2.47 | 1.56 | 2.52 | 1.28 |

**Table 7**
Results on the PSDQ for the different diagnostic groups.

| | ASS N=22[a] | Attachment N=11[b] | Depression N=28[c] | PTSS N=9 d | Identity N=12e | ADHD N=3 f | AN N=3 g | Behavior N=8 h | Tourette N=2 i | Adaptation N=5 j | Kruskal–Wallis (9.103) | p-value |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Self-esteem | | | | | | | | | | | 15.380 | .08 |
| General physical self-concept | | | | | | | | | | | 12.227 | .20 |
| Health | 4.58 ± 1.07 | 4.47 ± 0.98 | 3.92 ± 1.05 | 4.26 ± 1.13 | 3.82 ± 0.99 | 5.63 ± 0.33 | 4.79 ± 1.25 | 3.88 ± 1.34 | 5.69 ± 0.09 | 4.10 ± 1.12 | 17.174 | .05 |
| Coordination | | | | | | | | | | | 7.573 | .58 |
| Physical activity | | | | | | | | | | | 11.344 | .25 |
| Body fat | | | | | | | | | | | 8.387 | .50 |
| Appearance | | | | | | | | | | | 16.618 | .06 |
| Sport competence | | | | | | | | | | | 16.762 | .06 |
| Strength | 4.07 ± 1.64 | 4.30 ± 1.24 | 2.76 ± 1.15 | 3.65 ± 1.51 | 3.03 ± 1.40 | 3.83 ± 2.00 | 4.50 ± 1.20 | 3.77 ± 1.11 | 2.67 ± 0.24 | 3.73 ± 1.46 | 18.552 | .03 |
| Flexibility | 4.01 ± 1.33 | 4.02 ± 1.43 | 3.02 ± 1.27 | 3.50 ± 1.43 | 3.94 ± 1.22 | 2.39 ± 0.51 | 5.11 ± 0.84 | 3.15 ± 1.78 | 2.75 ± 0.82 | 4.03 ± 1.99 | 17.168 | .05 |
| Endurance | | | | | | | | | | | 10.808 | .29 |

*Note:* Mean and standard deviations are presented for the domains where significance was found because they are more clearly for interpretation than the sum of ranks.