The Well Rounded Body Image: The Dresdner Körperbildfragebogen DKB-35 in Hebrew

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ABSTRACT

Background: The Dresdner Körperbildfragebogen (DKB-35) is a positive and comprehensive measure of the relationship with the body. Written and used in German the original has good psychometric qualities. The goal of the current study was to translate it into Hebrew and then test its psychometric qualities.

Method: 292 adult community volunteers self-reported online on the DKB-35 as well as on the Satisfaction with Life Scale and the Eat-26. The data were exported into and analyzed in SPSS 21.0.

Results: Structural validity, reliability and convergent and divergent validity of the Hebrew DKB-35 was demonstrated. All five original sub-scales: Body-Acceptance, Vitality, Body-Narcissism, Physical-Contact, and Sexual-Fulfillment were recovered.

Conclusions: The DKB-35 in Hebrew can be used in the context of mental health and the process of recovery from eating disorders.

INTRODUCTION

Most body image measures concentrate on weight and size. These measures reflect the criterion of anorexia nervosa that specifies a perceptual and/or cognitive distortion, ruling that smaller and lighter is better. The eating disordered individual's perception may be distorted so that she sees herself as much bigger and heavier than she is, in an extreme of rejecting her perceived body. Thus, for example, the Stunkard Figure Rating Scale (1) contains an array of nine hand-drawn silhouettes of women that increase linearly in body fat. The first silhouette presents a slender woman with very little body fat and the last one represents an obese woman. Participants are asked to identify their current body size as well as that of the ideal, best-looking and healthiest woman. The discrepancies between the current figure and ideal, healthy, and best looking figures are then calculated. Most women rate themselves as fatter than any of the other three alternatives, and thus are said to have a negative body image or high body dissatisfaction (e.g., 2). Most other measures are verbal rather than pictorial, and include items such as "my hips are too wide," i.e., quantify the dissatisfaction of the individual in not conforming to the thin ideal. These measures do a good job of predicting eating disorders (3), correlate negatively with BMI (4) and positively with disordered eating symptoms (5). Recovery from eating disorders is negatively correlated with these measures of body dissatisfaction (6).

The Dresdner Körperbildfragebogen (DKB-35) broadens this concept considerably. It was written by a team of German psychologists (7), and to the best of our knowledge has not yet been translated into other languages. The DKB-35 has a very positive and comprehensive conceptualization of body image. It includes five sub-scales, Bodily Acceptance, Vitality, Body Narcissism, Sexual Fulfillment and Physical Contact. **Bodily Acceptance** includes items such as: "There are many situations in which I feel satisfied with my body" (item 7); and "I consciously choose my clothing so that it hides my body" (item 12, reversed). This scale captures the reverse of what is measured by most extant body-image instruments. In addition the DKB-35 has four sub-scales that describe other positive and gratifying aspects of bodily experience. The **Vitality** subscale includes items such as: "I am physically fit" (item 8) and "I lack vigor and

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zest" (item 3, reversed). The **Body Narcissism** subscale includes items such as: "I find it pleasant and stimulating when somebody looks at me attentively" (item 13) and "I like to show my body off" (item 33). The **Sexual Fulfillment** subscale includes items such as: "I feel my body pleasantly and intensively in sexuality" (item 4) and "I am very satisfied with my sexual experience" (item 9). The **Physical Contact** subscale includes items such as: "Physical contact is important for me to express closeness" (item 5) and "I do not like being touched" (item 19, reversed). In addition, the DKB-35 includes supplementary items with "yes" or "no" response options pertaining to regular exercise, current dieting, body piercing and tattoos.

There is some research on the DKB-35 in the original German. In a large non-clinical sample of men and women, all subscales were negatively correlated with BMI (8). Those who exercised regularly scored higher on all subscales, as did those who were not currently on a diet. Men scored significantly higher than women for Vitality, Bodily Acceptance and Sexual Fulfillment. Validation on a clinical sample was reported by Pöhlmann et al. (9). The DKB-35 and other measures of body image were administered to 560 patients with psychosomatic complaints. The DKB-35 factor structure was replicated using confirmatory factor analysis, and the subscales showed very good internal reliability. In this clinical sample the DKB-35 subscale scores were strongly associated with BMI. The relationship between the DKB-35 scores and other measures of body image provided convergent and divergent validity for the instrument. Thus the DKB-35 in German has a robust factor structure, reliable subscales, and divergent and convergent validity, in non-clinical and in clinical samples.

The DKB-35 is a comprehensive measure of positive, healthy, even joyful body perception and experience. If mental health is defined to include body image, high scores on the DKB-35 would indicate better mental health. If recovery from eating disorders were to include not only an absence of symptoms and bodily rejection, but an exuberant physical, sexual, narcissistic enjoyment of the body, a rise in the DKB-35 score would be a good indicator of broadly conceived recovery.

It is in this spirit of measuring the positive that we wished to examine the properties of the DKB-35 in languages (and cultures) other than the original German. Because the focus of this study was to test the relationship of DKB-35 scores to mental health, we added the measure of Satisfaction with Life (SWLS, 10). Since we hope the DKB-35 will be adopted as part of the assessment of recovery from eating disorders, we also administered the EAT-26 (11).

The goals of the current study were to translate the DKB-35 into Hebrew, to examine its psychometric properties, and to make it available for use in Hebrew, not only in the context of psychopathology, but also of mental health and recovery.

METHODS

PARTICIPANTS

Participants were 292 community volunteers (57 or 19.1% male) recruited through social networks. Participants ranged in age from 19 to 74 with a mean of 33.39 (SD=14.52). The most frequently endorsed family status was single, 58.8%, followed by 35.1% married. Just less than one third, 31%, were parents. Using housing density as a proxy for social economic status, participants ranged from lower to higher middle class, like many on-line samples. Participants had on average a college education (15.76 $\pm$ 3.64 years of schooling), though 40.1% had only high school education. The self-reported height and weight of the participants showed a BMI ranging from 15.4 to 42.2, with a mean of 23.4 and a SD of 4.0. The majority of participants, 65.1%, were in the normal range ($18.5 < BMI < 25$).

PROCEDURE

The IRB of the Ruppin Academic Center approved the study protocol and the informed consent procedure. Participants completed the self-report online, anonymously, and signed their consent in the opening screen of the electronic questionnaire, on which the researchers' contact details were available should questions or difficulties arise. The data were then downloaded into SPSS without any personal identifiers, to protect the privacy of the participants. The completion of the online questionnaire took about 30 minutes, and no queries or complaints were recorded.

INSTRUMENTS

1. DKB-35 (7): The instrument was downloaded in German from the internet site http://sportpaedagogik-sb.de/pdf/dkb-35.pdf in September 2014. The translation into Hebrew and English followed the star paradigm often used by the WHO (e.g., 12). A native German speaker translated it into English. A trilingual psychologist (RBM) independently back-translated it into German.

A bilingual psychologist (AHZ) translated the English version into Hebrew, and another bilingual psychologist (LLA) independently back-translated it into English. With the help of another trilingual psychologist (SK), the team then convened and discussed all disparities between the original German and the back-translation from English and corrected the English version accordingly; then the team did the same for the corrected English translation and the back-translation from Hebrew, correcting the Hebrew translation accordingly. The revised Hebrew version is available from the authors on request.

2. The Satisfaction with Life Scale (SWLS; 10) includes five items that measure the extent of the individual's satisfaction with his/her life and is a well-used scale of well-being. It correlates positively with measures of happiness, positivity, optimism, social support and subjective health, and negatively with depressive symptoms (13). Its brevity makes it user-friendly. In the current study the SWLS had internal reliability estimate of α=0.84.
3. The EAT-26 (11) has 26 items that assess eating attitudes. The Hebrew version has been used extensively for clinical (6) and nonclinical (14) samples. In the current study the EAT-26 had an internal reliability estimate of α=0.88.

RESULTS

After reversing 11 negatively framed items, the scales had good internal consistency, as measured by Cronbach's alpha. For **Vitality**, items: 2rev, 3rev, 6rev, 8, 14, 17, 26rev, and 32 α=.80; for **Body Acceptance** items: 7, 12, 15rev, 18rev, 23rev, 25, 28rev, and 33 α=.89; For **Body Narcissism** items: 1, 10, 13, 20, 29, 31, 33, and 34 α=.78; for **Sexual Fulfillment** items: 4, 9, 16, 21, 27, and 35 α=.89; for **Physical Contact** items: 5, 11, 19rev, 22, 24rev, and 30rev α=.73.

We studied the structural validity by first performing exploratory factor analysis (EFA), and then confirmatory factor analysis (CFA). The EFA was performed with Varimax rotation and Kaiser normalization, as in the original analysis of the DKB-35 in German (7). The factor analysis was restricted to five factors. The first five factors had Eigen values of 9.88, 3.33, 2.34, 2.01, and 1.82, respectively (see Table 1), with cumulative explained variance of 57.05%. There was a steep decline in Eigen values after the fifth factor. Item factor loading was restricted to >.10.

The resulting structure can be seen in Table 1. Three items do not conform satisfactorily to the expected structure: item 1 "I move gracefully" which should load onto the **Body Narcissism** subscale, loads instead onto the **Body Acceptance** subscale. On consideration of its content and behavior we decided to move item 1 to the Body Acceptance scale. Item 33 "I like to show my body off" that should load onto the **Body Acceptance** subscale, loads instead onto the **Body Narcissism** subscale. On consideration of its content and behavior we decided to move item 33 to the Body Narcissism scale. Doing so slightly improved the reliability of both scales: **Body Acceptance** to α=.90 and **Body Narcissism** to α=.78. A low but correct loading was observed for item 26rev: "I reach my physical limits easily" that loads onto the correct sub-scale **Vitality**, but has a factor loading of .15. Removing item 26rev from the **Vitality** subscale slightly raises the reliability to α=.82. Thus, item 26rev was totally subtracted from the structure. These three changes were introduced when performing the CFA.

CONFIRMATORY FACTOR ANALYSIS OF THE DKB-35

Confirmatory factor analysis (CFA) is the current golden standard for testing whether measures of a construct are consistent with their theoretically or empirically hypothesized structure. Thus if CFA confirms the structure of the translated questionnaire in the original language, it is additional reassurance that the translation has kept construct validity. In CFA the hypothesized structure is entered to constrain the analysis and then the equations are calculated to see how well the actual data fits the constraints of the hypothesized model. The CFA yields model-fit-indices; if they are good – the hypothesized structure is confirmed; if they are poor the model will be rejected.

Confirmatory Factor Analysis (CFA) shows that the five factor solution is a good one with sufficient Goodness of Fit indices: Chi square=306.89, p<0.001. NFI=.91; RMSEA=.07 (see Figure 1).

A comparison of the subscale means between those who exercised regularly with those who did not revealed a significant advantage to exercisers on **Vitality** (mean of 3.69 vs 3.27, $t_{(264)}$=-4.62, p<0.001), but not for the other four subscales. Comparison of subscale means between those who are currently on a diet (N=56) with those who are not showed significantly higher scores for the **Body Acceptance** for non-dieters (mean of 3.43 vs 2.90, $t_{(262)}$=4.15, p<0.001) and for **Sexual Fulfillment** (mean of 3.27 vs 3.51, $t_{(262)}$=1.71, p<.05). Men and women differed, women have significantly lower scores on **Vitality**

Table 1. *Exploratory Factor Analysis for DKB-35 – Hebrew version*

Item no.	Item	Factor				
		Body acceptance	Sexual fulfillment	Vitality	Body narcissism	Physical contact
23.	I wish I had a different body. (R)	.83				
25.	I am satisfied with how I look.	.79				
12.	I like my body.	.78				
28.	If I could change my body in some way, I would. (R)	.77				
18.	I often feel unwell in my body. (R)	.68				
7.	There are many situations in which I feel satisfied with my body.	.66				
15.	I consciously choose my clothing so that it hides my body. (R)	.57				
1.	I move gracefully.	.51				
9.	I am very satisfied with my sex life.		.78			
35.	My sexual experiences are satisfying for me.		.78			
27.	I can enjoy my sexuality.		.74			
21.	I can enjoy sexual situations without inhibition.		.69			
4.	While being engaged in sexual activity, I feel my body pleasantly and intensely.		.66			
16.	Sexuality is an important domain of my life.		.65			
17.	I am physically able to function well.			.74		
3.	I lack vigor and zest. (R)			.71		
14.	I have a lot of energy.			.69		
2.	I am often in poor physical state. (R)			.68		
32.	I am physically hardy and resilient.			.62		
8.	I am physically fit.			.57		
6.	I often feel physically run down. (R)	.50		.54		
33.	I like to show my body off.				.71	
31.	I make use of my body to attract attention.				.69	
34.	I like to be in the center.				.67	
20.	When somebody pays attention to my body, I feel appreciated.				.62	
13.	I find it pleasant and stimulating when somebody looks at me attentively.				.62	
29.	My body is expressive.				.40	
10.	Other people find me attractive.	.53			.37	
24.	I consciously avoid touching other people. (R)					.80
19.	I do not like being touched. (R)					.75
30.	I only allow a few people to touch me. (R)					.63
22.	I like it when someone takes my arm.					.49
5.	Physical contact is important for me to express closeness.		.57			.45
11.	I seek out physical closeness and tenderness.		.49			.42
Cronbach's alpha		.90	.89	.82	.78	.73

Note: Only factor loading of over .10 were chosen the analysis

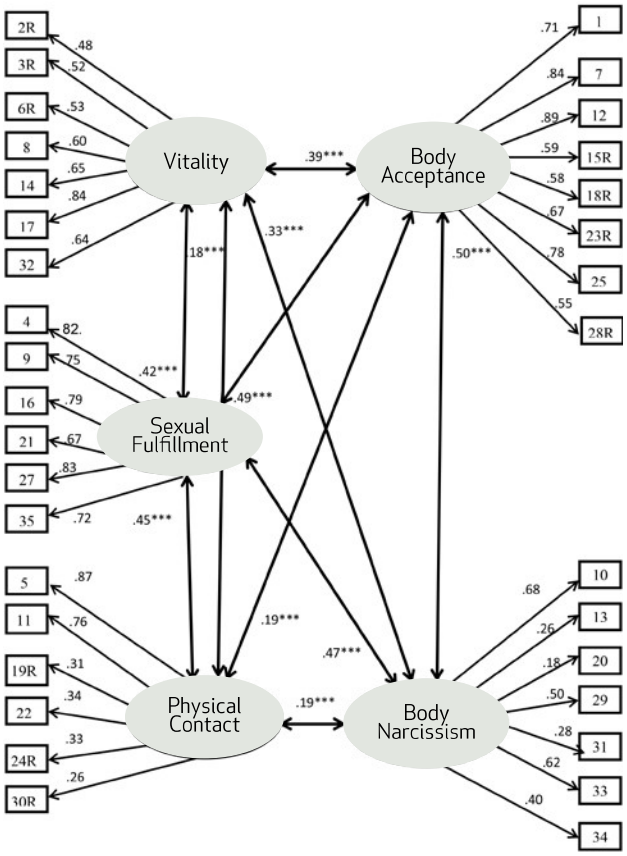
($t_{(260)}$=3.35; p<0.001); on **Physical Contact** ($t_{(259)}$=1.99; p<.05) and **Sexual Fulfillment** ($t_{(259)}$=3.58, p<.001).

The five subscale scores were inter-correlated; the inter-correlations are shown in Table 2. All subscale scores correlated positively with the Satisfaction with Life Scale (SWLS; 10) and negatively with the EAT-26 scale (11). These correlations are shown in Table 3, and they range from weak to moderate, showing convergent as well as divergent validity. The subscale scores are related to BMI; three out of five correlate negatively with BMI as shown in Table 3. The means for the subscale scores of different BMI intervals are different, in particular obese individuals have the lowest scores and the underweight individuals have the highest scores on all the subscales as shown in Table 4. It should be noted that the **Sexual Fulfillment** and the **Physical Contact** scale are more weakly related to BMI than the other three subscales.

DISCUSSION

The DKB-35 was written in German, and the original contained five subscales that describe a satisfaction with

Figure 1. *Confirmatory factor analysis for the five factor model: DKB-35 – Hebrew version*



Note: Ellipses signify latent variables. Rectangles signify questions in the Hebrew version. Rectangles between latent variables signify correlations between latent variables. All correlations between latent and observed variables were significant at p<.05.

one's body's appearance (Body Acceptance), with the body's energy (Vitality) with its sexual function (Sexual Fulfillment), with its effect on others (Body Narcissism), and with touching and being touched (Physical Contact) (7). In the current study, the DKB-35 in Hebrew was administered to a community sample of adult volunteers.

The results presented here should be viewed with the study limitations in mind. The sample was a convenience sample and not representative of the general Israeli population. Because the self-report was administered online, the participants are younger and more educated on average than the general population. The distribution of BMI resulted in a small number of participants in the two extreme groups, the underweight and the obese, making comparisons of weight groups less potentially powerful.

Structural validity of the DKB-35 in Hebrew was shown in a number of different ways. The EFA recovered the

Table 2. *Inter-correlations of the DKB-35 subscale-scores (N=267)*

	Physical Contact	Sexual Fulfillment	Body Narcissism	Body Acceptance
Vitality	.15*	.48***	.33***	.58***
Body Acceptance	.16***	.53***	.43***	
Body Narcissism	.27***	.47***		
Sexual Fulfillment	.41***			

Note: *** p<.001 (2-tailed). *p<.05 (2-tailed)

Table 3. *Correlations of the DKB-35 subscale-scores with other measures (N=267)*

	Eat26	SWLS	BMI
Vitality	-.25***	.39***	-.13*
Physical Contact	-.11	.14*	-.01
Sexual Fulfillment	-.23***	.35***	-.12
Body Narcissism	.02	.11	-.22***
Body Acceptance	-.49***	.41***	-.43***

Note: *** p<.001 (2-tailed); *p<.05 (2-tailed). Eat26 the Eating Attitudes scale (11); SWLS (10) Satisfaction with Life Scale

five-factor structure shown in the German original, supplying high Eigen-values for the first five factors that together explained 57% of the variance. After minor changes suggested by the EFA, the CFA confirmed the factor structure and showed good fit indices. Thus the basic five-factor-structure shown in German is recovered in the Hebrew translation.

Convergent and divergent validity was examined by positive correlations with the Satisfaction with Life Scale (10) and negative correlations with the Eating Attitudes Test (11). Thus feeling good about one's life is correlated with feeling good about one's body, and feeling bad with one's body is correlated with disordered eating.

Reliability can be shown in a number of ways. In the current study we report on the internal reliability of the sub-scales, all showing moderately high reliability estimates, comparable to those found in the original German.

The negative correlations of the DKB-35 with BMI show the prominence of the thin ideal in Israeli culture, as in other Western cultures. Moreover, analysis of variance by BMI intervals result in the obese scoring lowest on all subscales and the underweight highest.

We see the DKB-35 as a promising instrument in the context of the process of recovery from eating disorders. Questionnaires used in the field of eating disorders traditionally emphasize the disappearance of negative attitudes towards the body ("body dissatisfaction") rather than the development of a positive connection. Such instruments are useful in assessing levels of psychopathology,

Table 4. *Analysis of variance of DKB-35 subscales for BMI intervals (N=267)*

	Underweight BMI<18.5 N=17	Normal Weight 18.5≤BMI<25 N=175	Overweight 25≤BMI<30 N=51	Obese BMI≤30 N=20	$F_{(df),p}$
Vitality	3.60 (.71)[d]	3.50 (.78)	3.53 (.69)	3.08 (.87)[a]	NS
Body Acc.	3.95 (.86)[d]	3.46 (.80)[c,d]	3.02 (.82)[a,b]	2.44 (.83)[a,b,c]	$F_{(3,258)}$=15.30, p<.001
Body Narc.	3.27 (.65)[b,c,d]	2.94 (.66)[c,d]	2.84 (.71)[a]	2.54 (.65)[a,b]	$F_{(3,256)}$=3.98, p<.01
Physical Con.	3.64 (.53)	3.74 (.75)	3.64 (.64)	3.69 (.65)	NS
Sexual Ful.	3.61 (1.01)	3.51 (.91)	3.29 (.96)	3.13 (1.03)	NS

Note: Body Acc.= Body Acceptance; Body Narc. = Body Narcissism; Physical Con.= Physical Contact; Sexual Ful.= Sexual Fulfillment. Superscript letters denote groups for which the comparison with the Bonferroni correction for multiple comparisons were significantly different, e.g., Body Acceptance of the Underweight (group a) is significantly higher than that of the Obese (group d) and the Obese are significantly lower in Body Acceptance than the Underweight (group a) the Normal weight (group b) and the Overweight (group c).

which obviously declines with the process of recovery. Yet measures that tap into elements of growth, vitality and joy in relation to one's body during the recovery process are sadly lacking. The development of positive body experience has been posited as an essential step in the eating disorder recovery process (13), and reconnection with the body characterizes full recovery from an eating disorder (15, 16). The DKB-35 may also be relevant to alleviation of other conditions, for example in assessing connection to the body as a result of growth following bodily trauma (17).

Further research is needed to extend our understanding of the DKB-35 in Hebrew. Clinical studies discriminating between patient groups and controls such as the study of psychosomatic patients (9) in German would be of value, as would longitudinal studies showing a rise in DKB-35 scores in patients recovering from eating disorders. Test-retest of non-clinical and clinical samples are needed to examine the stability over time of this promising measure of positive and accepting attitudes toward one's body.

References

1. Stunkard A, Sorenson T, Schulsinger F. Use of Danish adoption register for the study of obesity and thinness. In: Kety S, Rowland, LP, Sidman RL, Matthysse SW, editors. The genetics of neurological and psychiatric disorders. New York: Raven, 1983: pp. 115-120.
2. Lev-Ari L, Baumgarten-Katz I, Zohar AH. Mirror mirror on the wall: How women learn body dissatisfaction. Eat Behav 2014;15:397-402.
3. Stice E. Marti CN, Durant S. Risk factors for onset of eating disorders: Evidence of multiple risk pathways from an 8-year prospective study. Behav Res Ther 2011;49:622-627.
4. Hill AJ, Williams J. Psychological health in a non-clinical sample of obese women. Obes Relat Metab Disord 1998;22:578-583.
5. Neumark-Sztainer D, Paxton SJ, Hannan PJ, Haines J, Story M. Does body dissatisfaction matter? Five-year longitudinal associations between body satisfaction and health behaviors in adolescent females and males. J Adolesc Health 2006;39:244-251.
6. Bachner-Melman R, Zohar AH, Ebstein RP. An examination of cognitive versus behavioral components of recovery from anorexia nervosa. J Nerv Ment Dis 2006;194:697-703.
7. Pöhlmann K, Thiel P, Joraschky P. Das Körperbild von Essgestörten – Selbstbeschreibungen auf der Basis des Dresdner Körperbildfragebogens. In P. Joraschky, H. Lausberg, K. Pöhlmann, editors. Körperorientierte Diagnostik und Psychotherapie bei Essstörungen (pp. 57-72). Gießen: Psychosozial-Verlag, 2008 [German].
8. Matthes J, Franke GH, Jäger S. Psychometric analysis of the Dresdner Körperbildfragebogen (DKB-35) in a non-clinical sample. Zeitschrift für Medizinische Psychologie 2012;1:21-30 [German].
9. Pöhlmann K, Roth M, Brähler E, Joraschky P. Validerung auf der basis einer klinischen stichprobe. Psychother Psychosom Med Psychol 2014;64: 93-100 [German].
10. Pavot W, Diener E, Colvin CR, Sandvik E. Further validation of the Satisfaction with Life Scale: Evidence of the cross-method convergence well-being measures. J Pers Assess 1991;57:149-161.
11. Garner DM, Olmsted MP, Bohr Y, Garfinkel PE. The eating attitudes test: Psychometric features and clinical correlates. Psychol Med 1982;12: 871-878.
12. Stewart RC, Umar E, Tomenson B, Creed F. Validation of screening tools for antenatal depression in Malawi - A comparison of the Edinburgh Postnatal Depression Scale and Self Reporting Questionnaire. J Affect Disord 2013;25:1041-1047.
13. Park N, Park M, Peterson C. When is the search for meaning related to life satisfaction? Appi Psychol: Health Well Being 2010; 2:1-13.
14. Koslowsky M, Scheinberg Z, Bleich A, Mark M, Apter A, Danon Y, Solomon Z. The factor structure and criterion validity of the short form of the Eating Attitudes. J Pers Assess 1992;58:27-35.
15. Probst M, Van Coppenolle H, Vandereycken W. Body experience in anorexia nervosa patients: An overview of therapeutic approaches. Eat Dis 1995; 3:145-157.
16. Fitzsimmons-Craft EE, Bardone-Cone AM, Kelly KA. Objectified body consciousness in relation to recovery from an eating disorder. Eat Behav 2011;12:302-308.
17. Hefferon K, Grealy M, Mutrie N. Transforming from cocoon to butterfly: The potential role of the body in the process of posttraumatic growth. J Humanistic Psychol 2010; 50: 224-247.