

Body image and health behaviors: is there a relationship between lifestyles and positive body image?

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Abstract

The study illustrates a research on the relationship between body image and lifestyles in a sample of 262 young amateur athletes that have a regular attendance of a gym in Cassino (Central Italy). The following questionnaires were used: Body Shape Questionnaire (BSQ34), International Physical Activity Questionnaire (IPAQ), Short form 12 items (SF12). The participants were 257 (response rate 98.1%) mainly of young age (18-24 years, 63.8%), single (72%), with a senior high school diploma (57.2%), students (63%). For almost all the BSQ-34 questionnaire items differences for gender were found, with Females more worried than males. 187 (72.8%) reported some vigorous activity during a week, 207 (80.5%) some moderate activity, and 229 (89.1%) walking. The participants had a median PCS score of 54.2 (range: 24.5-64.8) and a median MCS score of 43.8 (range: 9.3 – 58.7). The mean score of the Mediterranean diet was 4.8 (median = 5; Range = 1-8), and only 72 individuals (11.7%) had optimal score (over or equal to 6). *Clin Ter* 2016; 167(3):e63-69. doi: 10.7417/CT.2016.1935

Key words: body image, physical activity, nutrition, Lifestyles

Background

Body image is a multidimensional construct with attitudinal, perceptual and also behavioral components covering various attributes like muscularity, leanness and body weight (1).

Although positive body image has appeared in the scholarly literature only within the past decade, research suggests that it is a multifaceted construct consisting of body appreciation, an internal orientation toward the body, and satisfaction with the body's capabilities. Body appreciation refers to unconditional approval and respect for the body (2-4). Individuals who appreciate their bodies recognize that their bodies are unique and they accept their flaws as well as their assets. They show respect for the body by attending to its needs, engaging in health-promoting behaviors (5).

Body image was defined as “a person's perceptions, thoughts, and feelings about his or her body” by Grogan (6). Body dissatisfaction is a risk factor for eating disorders (7). Regular participation in physical activity confers many positive health outcomes in young people, such as reduced risk of depression and obesity (8, 9).

Regular physical activity leads to physical and mental health benefits (10) which can make an important contribution to improving physical and psychological quality of life (11). Physical activity is indeed linked with a number of positive physical and psychological health outcomes (12).

The relationship between physical activity and health status has been described extensively in several studies (13-22).

However, while fitness and health motivations may be associated with positive consequences of physical exercise for individuals with low body dissatisfaction, greater endorsement of both fitness and health motivations, as well as appearance and weight motivations, are associated with even greater state body dissatisfaction in women categorized as high body dissatisfied (23).

Furthermore, most studies tend to focus on women only, which perpetuates the pathological problem for women more so than men (24, 25).

In general body, weight and shape satisfaction decreases with increasing BMI and the search for desired physical form involves a wide range of behaviors and activities such as dieting and physical exercise (26, 27). Dieting is more frequent among women than among men (28), who tend to practice physical exercise rather than diet to change the look of their bodies and to lose weight (29). Moreover, improving body image, particularly by reducing its importance in one's personal life, plays a role in enhancing eating self-regulation during weight control in women (30). There has been a significant change in dietary habits and physical activity levels worldwide (31).

Diet and physical activity influence health both together and separately. Although the effects of diet and physical activity on health often interact, there are additional health

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benefits to be gained from physical activity that are independent of nutrition and diet, and there are significant nutritional risks that are unrelated to obesity. Physical activity is a fundamental means of improving the physical and mental health of individuals (32).

High motivators for physical exercise participation are weight management, appearance and body dissatisfaction (33, 34), the relationship between level of satisfaction and physical activity is still unclear: men practice it more than women according Neumark-Sztainer et al. (35), probably because men are more satisfied with their body. A negative body image may act as a barrier to physical participation and may be involved in social physique anxiety linked to real or unreal negative physical evaluation (36).

The primary emotions have been study within the context of self-conscious emotions and body image theories (37-39).

Although many studies have been carried out in this field, it is important to proceed further in this direction to better understand the many facets of the concept of body image and its perception. In particular there is a need to study lifestyle factors and dietary habits and their association with body image and perception in young adults.

The present study pays special attention to perception of body image as it has particular importance for its association with subjective well-being.

The aim of this study was to explore the associations between body image with physical activity, dietary habits and lifestyles.

Methods

Study design and Inclusion criteria

A cross-sectional study (observational study) was carried out.

Study participants were selected according to the following inclusion criteria:

- Regular attendance of a gym;
- Aged between 20 and 30 years old.

Enrolment and participants

The sample was found within sporting centers in which the participants practiced non-competitive activities in the area of Cassino (Central Italy).

The participation was on voluntary basis and the responders remained anonymous. In order to obtain a confidence level of 95% (margin of error of 5%) of a population of adult practitioners sports activity, a sample of approximately 380 participants was estimated.

The questionnaires was administered directly in gyms, and the time required for the completion of the questionnaire was about twenty minutes.

Outcome measures

To assess the body image perception, as well as lifestyles,

eating habits of non-competitive athletes young adults.

The following questionnaires were used

- *Body Shape Questionnaire (BSQ34)*
Body Shape Questionnaire (34 items) measures levels of concern with shape in the last 4 weeks (six-point Likert scale, 1 = 'Never' to 6 = 'Always'). The items covered symptoms that can appear regarding a negative body image perception. Sample items include: "Have you been so worried about your shape that you have been feeling you ought to diet?"; "Have you noticed the shape of others and felt that your own shape compared unfavorable?".
- *International Physical Activity Questionnaire (IPAQ)*.
The short version comprises 7 items on Physical Activity (PA) providing information about time spent on walking, on vigorous and moderate intensity activity, on sedentary activity and demographic information (gender, age, educational level and work); 4 items relate to demographic data (age, gender, educational level, type of work) and the 7 last items concern comprehension of the questionnaire (40-42).

Questionnaire of the eating habits

- Composed of four multiple-choice items that aim eating habits and adherence to the Mediterranean diet, and in general to healthy eating. The questionnaire is divided into two sections: eating habits and use of alcohol.

Sf 12 health status questionnaire

- SF-12 Health Survey is a shorter version of the SF-36 Health Survey that uses just 12 questions to measure functional health and well-being from the responder's point of view. It's a valid measure of physical and mental health.

Statistical analysis

The descriptive statistical analysis was carried out through the use of frequency distributions and graphs for qualitative variables and the calculation of the central tendency indices and dispersion for quantitative variables.

For univariate analysis the chi-square test was used. The level of significance chosen was $p < 0.05$. Data analysis was performed with SPSS 15.0 for Windows.

Results

The questionnaires were administered to 262 individuals, and 257 (98.1%) were fully filled. The responder were prevalently females (54.5%), of young age (18-24 years, 63.8%), single (72%), with a senior high school diploma (57.2%), students (63%) (Table 1).

Table 1. Socio-demographic characteristics of the participants.

Variables	Frequency n(%)
Gender	
Females	140 (54.5)
Males	117 (45.5)
Age group	
18-24	164 (63.8)
25-30	26 (10.1)
>30	67 (26.1)
Civil status	
Single	185 (72)
Single with partner	19 (7.4)
Married	47 (18.3)
Separate/Divorced	6 (2.3)
Educational level	
Elementary school	3 (1.2)
Junior high school	66 (25.7)
Senior high school	147 (57.2)
University	41 (16)
Occupation	
Students	163 (63.4)
Dependent workers	63 (24.5)
Independent workers	20 (7.8)
Housewives	11 (4.3)

BSQ-34

The answers of the respondents concerning the BSQ-34 questionnaire are presented in table 2.

Differences for gender were found for item 1 (Female more worried about, $p = 0.05$), item 2 (Female more worried about, $p = 0.002$), item 3 (Female more worried about, $p < 0.001$), item 4 (Female more worried about, $p < 0.001$), item 5 (Female more worried about, $p < 0.001$), item 6 (Female more worried about, $p = 0.001$), item 7 (Female more worried about, $p = 0.001$), item 8 (Female more worried about, $p = 0.044$), item 9 (Female more worried about, $p = 0.001$), item 10 (Female more worried about, $p < 0.001$), item 11 (Female more worried about, $p = 0.014$), item 12 (Female more worried about, $p = 0.012$), item 13 (Female more worried about, $p = 0.043$), item 14 (Female more worried about, $p < 0.001$), item 15 (Female more worried about, $p < 0.001$), item 16 (Female more worried about, $p < 0.001$), item 17 (Female more worried about, $p < 0.001$), item 19 (Female more worried about, $p = 0.001$), item 20 (Female more worried about, $p = 0.001$), item 21 (Female more worried about, $p = 0.011$), item 22 (Female more worried about, $p = 0.040$), item 23 (Female more worried about, $p = 0.018$), item 25 (Female more worried about, $p < 0.001$), item 28 (Female more worried about, $p < 0.001$), item 29 (Female more worried about, $p < 0.001$), item 30 (Female more worried about, $p < 0.001$), item 31 (Female more worried about, $p = 0.001$), item 34 (Female more worried about, $p = 0.027$).

Differences for age were found for item 2 (older people more worried, $p = 0.037$), item 9 (younger people more worried, $p = 0.032$), item 9 (younger people more worried, $p = 0.041$), item 15 (older more worried about, $p = 0.018$), item 16 (people in the middle age group more worried about,

$p = 0.001$), item 21 (younger people more worried about, $p = 0.033$), item 22 (younger people more worried about, $p = 0.015$), item 28 (older people more worried about, $p = 0.031$).

Differences for occupation were found for item 2 (housewives more worried, $p = 0.007$), item 5 (housewives more worried about, $p = 0.04$), item 6 (housewives more worried about, $p = 0.026$), item 11 (housewives more worried about, $p = 0.007$), item 16 (housewives more worried about, $p = 0.027$), item 19 (housewives more worried about, $p = 0.020$), item 20 (students more worried about, $p = 0.022$), item 22 (students more worried about, $p = 0.0241$), item 33 (autonomous workers more worried about, $p = 0.019$).

Differences for civil status were found for item 6 (single/divorced more worried, $p = 0.044$), item 10 (single/divorced more worried, $p = 0.043$), item 12 (single/divorced more worried, $p = 0.027$), item 22 (single/divorced more worried about, $p = 0.049$).

No difference was found for educational level.

IPAQ questionnaire

Out of 257 participants, 187 (72.8%) reported some vigorous activity during a week, 207 (80.5%) some moderate activity, and 229 (89.1%) walking. Differences between groups were found only for vigorous activity by gender (83.8% for males and 63.6% for females; $p < 0.001$), by age (66.5% for 18-24years, 88.5% for 25-30 years and 82.1% for >30 years; $p = 0.009$), by professional activity (66.9% for students, 81% for dependent workers, 81.8% for housewives and 90% for autonomous workers ; $p = 0.038$).

SF-12

As far as concerns the health related quality of life, the participants had a median PCS score of 54.2 (range: 24.5-64.8) and a median MCS score of 43.8 (range: 9.3 – 58.7). Differences for the MCS score were found by gender (median males: 47.0; females: 40.9; $p = 0.001$), civil status (median married: 49.3; single/divorced: 42.1; $p = 0.002$), age (median 18-24 years: 41.7; 25-30 years: 44.4; >30 years: 49.4; $p = 0.001$) and professional status (median dependent workers: 49.2; autonomous workers: 48.6; students: 41.8; housewives: 38.6; $p = 0.007$). No differences were found between groups for PCS score.

Mediterranean score

The mean score of the Mediterranean diet was 4.8 (median = 5; Range = 1-8), and only 72 individuals (11.7%) had optimal score (over or equal to 6). Differences for this score were found only by educational level (median score for low education: 4; high education: 5; $p = 0.048$).

Associations between body image with physical activity, dietary habits and lifestyles

Wine consumption was associated with item 1 (Has feeling bored made you brood about your shape?) (never for 31.3% of wine drinkers, and for 14.9% of no drinkers; $p = 0.016$), item 12 (Have you noticed the shape of other women

Table 2. BSQ-34 questionnaire.

Item	Question	Never	Rarely	sometimes	Often/very often/always
1.	Has feeling bored made you brood about your shape?	52 (20.2)	52 (20.2)	72 (28)	81 (31.5)
2.	Have you been so worried about your shape that you have been feeling you ought to diet?	78 (30.4)	46 (17.9)	55 (21.4)	78 (30.4)
3.	Have you thought that your thighs, hips or bottom are too large for the rest of you?	99 (38.5)	44 (17.1)	52 (20.2)	62 (24.1)
4.	Have you been afraid that you might become fat (or fatter)?	55 (21.4)	46 (17.9)	60 (23.3)	96 (37.4)
5.	Have you worried about your flesh being not firm enough?	89 (34.6)	40 (15.6)	49 (19.1)	79 (30.7)
6.	Has feeling full (e.g. after eating a large meal) made you feel fat?	93 (36.2)	45 (17.5)	53 (20.6)	66 (25.7)
7.	Have you felt so bad about your shape that you have cried?	191 (74.3)	22 (8.6)	26 (10.1)	18 (7)
8.	Have you avoided running because your flesh might wobble?	197 (76.7)	31 (12.1)	18 (7)	11 (4.3)
9.	Has being with thin women made you feel self-conscious about your shape?	169 (65.8)	38 (14.8)	24 (9.3)	26 (10.1)
10.	Have you worried about your thighs spreading out when sitting down?	175 (68.1)	27 (10.5)	26 (10.1)	29 (11.3)
11.	Has eating even a small amount of food made you feel fat?	172 (66.9)	50 (19.5)	23 (8.9)	12 (4.7)
12.	Have you noticed the shape of other women and felt that your own shape compared unfavorably?	98 (38.1)	67 (26.1)	56 (21.8)	36 (14)
13.	Has thinking about your shape interfered with your ability to concentrate (e.g. while watching television, reading, listening to conversations)?	170 (66.1)	43 (16.7)	30 (11.7)	14 (5.4)
14.	Has being naked, such as when taking a bath, made you feel fat?	115 (44.7)	50 (19.5)	39 (15.2)	53 (20.6)
15.	Have you avoided wearing clothes which make you particularly aware of the shape of your body?	90 (35)	40 (15.6)	57 (22.2)	70 (27.2)
16.	Have you imagined cutting off fleshy areas of your body?	108 (42)	42 (16.3)	46 (17.9)	61 (23.7)
17.	Has eating sweets, cakes, or other high calorie food made you feel fat?	100 (38.9)	52 (20.2)	44 (17.1)	61 (23.7)
18.	Have you not gone out to social occasions (e.g. parties) because you have felt bad about your shape?	207 (80.5)	23 (8.9)	17 (6.6)	10 (3.9)
19.	Have you felt excessively large and rounded?	116 (45.1)	41 (16)	52 (20.2)	48 (18.7)
20.	Have you felt ashamed of your body?	119 (46.3)	53 (20.6)	41 (16)	44 (17.1)
21.	Has worry about your shape made you diet?	91 (35.4)	43 (16.7)	40 (15.6)	83 (32.3)
22.	Have you felt happiest about your shape when your stomach has been empty (e.g. in the morning)?	121 (47.1)	49 (19.1)	35 (13.6)	52 (20.2)
23.	Have you thought that you are in the shape you are because you lack self-control?	157 (61.1)	38 (14.8)	28 (10.9)	34 (13.2)
24.	Have you worried about other people seeing rolls of fat around your waist or stomach?	92 (35.8)	60 (23.3)	56 (21.8)	49 (19.1)
25.	Have you felt that it is not fair that other women are thinner than you?	155 (60.3)	29 (11.3)	36 (14)	37 (14.4)
26.	Have you vomited in order to feel thinner?	230 (89.5)	7 (2.7)	10 (3.9)	10 (3.9)
27.	When in company have you worried about taking up too much room (e.g. sitting on a sofa, or a bus seat)?	205 (79.8)	23 (8.9)	13 (5.1)	16 (6.2)
28.	Have you worried about your flesh being dimply?	124 (48.2)	37 (14.4)	36 (14)	60 (23.3)
29.	Has seeing your reflection (e.g. in a mirror or shop window) made you feel bad about your shape?	92 (35.8)	57 (22.2)	49 (19.1)	59 (23)
30.	Have you pinched areas of your body to see how much fat there is?	121 (47.1)	46 (17.9)	42 (16.3)	48 (18.7)
31.	Have you avoided situations where people could see your body (e.g. communal changing rooms or swimming baths)?	154 (59.9)	32 (12.5)	25 (9.7)	46 (17.9)
32.	Have you taken laxatives in order to feel thinner?	235 (91.4)	9 (3.5)	3 (1.2)	10 (3.9)
33.	Have you been particularly self-conscious about your shape when in the company of other people?	89 (34.6)	51 (19.8)	55 (21.4)	62 (24.1)
34.	Has worry about your shape made you feel you ought to exercise?	56 (21.8)	36 (14)	46 (17.9)	119 (46.3)

and felt that your own shape compared unfavorably?)(never for 33.9% of wine drinkers, and for 47.0% of no drinkers; $p = 0.038$), item 26 (Have you vomited in order to feel thinner?)(often for 8.4% of wine drinkers, and for 5.2% of no drinkers; $p = 0.011$), item 28 (Have you worried about your flesh being dimply?)(never for 59% of wine drinkers, and for 43.1% of no drinkers; $p = 0.038$).

Beer consumption was associated with item 1 (Has feeling bored made you brood about your shape?)(never for 31.2% of beer drinkers, and for 14.0% of no drinkers; $p = 0.005$), item 27 (When in company have you worried about taking up too much room (e.g. sitting on a sofa, or a bus seat?)(never for 69.9% of beer drinkers, and for 85.4% of no drinkers; $p = 0.021$), item 28 (Have you worried about your flesh being dimply?)(never for 51.6% of wine drinkers, and for 46.3% of no drinkers; $p = 0.018$), item 33 (Have you been particularly self-conscious about your shape when in the company of other people?)(often for 32.3% of beer drinkers, and for 19.5% of no drinkers; $p = 0.017$).

Spirit consumption was associated with item 3 (Have you thought that your thighs, hips or bottom are too large for the rest of you?)(always for 32.9% of spirit drinkers, and for 20.9% of no drinkers; $p = 0.034$), item 9 (Has being with thin women made you feel self-conscious about your shape?)(never for 68.4% of spirit drinkers, and for 58.6% of no drinkers; $p = 0.034$), item 10 (Have you worried about your thighs spreading out when sitting down?)(never for 72.7% of spirit drinkers, and for 55.7% of no drinkers; $p = 0.013$), item 13 (Has thinking about your shape interfered with your ability to concentrate (e.g. while watching television, reading, listening to conversations?)(never for 54.3% of spirit drinkers, and for 70.6% of no drinkers; $p = 0.024$), item 17 (Has eating sweets, cakes, or other high calorie food made you feel fat?)(often for 35.7% of spirit drinkers, and for 19.3% of no drinkers; $p = 0.045$), item 19 (Have you felt excessively large and rounded?)(often for 25.7% of spirit drinkers, and for 16% of no drinkers; $p = 0.05$), item 20 (Have you felt ashamed of your body?)(often for 25.7% of spirit drinkers, and for 13.9% of no drinkers; $p = 0.018$), item 22 (Have you felt happiest about your shape when your stomach has been empty (e.g. in the morning?)(often for 23.7% of spirit drinkers, and for 16.4% of no drinkers; $p = 0.029$), item 24 (Have you worried about other people seeing rolls of fat around your waist or stomach?)(often for 27.1% of spirit drinkers, and for 16% of no drinkers; $p = 0.018$), item 26 (Have you vomited in order to feel thinner?)(often for 8.6% of spirit drinkers, and for 2.1% of no drinkers; $p = 0.002$), item 27 (When in company have you worried about taking up too much room (e.g. sitting on a sofa, or a bus seat?)(never for 68.6% of spirit drinkers, and for 84% of no drinkers; $p = 0.016$).

Drinking alcohol during the week end was associated with item 22 (Have you felt happiest about your shape when your stomach has been empty (e.g. in the morning?)(often for 28.6% of spirit drinkers, and for 17.1% of no drinkers; $p = 0.009$), item 24 (Have you worried about other people seeing rolls of fat around your waist or stomach?)(often for 24.4% of spirit drinkers, and for 13.1% of no drinkers; $p = 0.044$).

A vigorous physical activity was associated with item 24 (Have you worried about other people seeing rolls of fat

around your waist or stomach?)(often for 21.9% of vigorous activity, and for 11.4% of no activity; $p = 0.021$), item 31 (Have you avoided situations where people could see your body (e.g. communal changing rooms or swimming baths?)(often for 27.2% of vigorous activity, and for 14.4% of no activity; $p = 0.05$).

A moderate physical activity was associated with item 6 (Has feeling full (e.g. after eating a large meal) made you feel fat?)(often for 28.5% of moderate activity, and for 14.0% of no activity; $p = 0.045$), item 13 (Has thinking about your shape interfered with your ability to concentrate (e.g. while watching television, reading, listening to conversations?)(never for 62.8% of moderate activity, and for 80.0% of no activity; $p = 0.045$), item 17 (Has eating sweets, cakes, or other high calorie food made you feel fat?)(never for 36.2% of moderate activity, and for 50.0% of no activity; $p = 0.031$), item 18 (Have you not gone out to social occasions (e.g. parties) because you have felt bad about your shape?)(never for 82.4% of moderate activity, and for 75.7% of no activity; $p = 0.036$), item 24 (Have you worried about other people seeing rolls of fat around your waist or stomach?)(often for 19.8% of moderate activity, and for 16% of no activity; $p = 0.036$), item 34 (Has worry about your shape made you feel you ought to exercise?)(often for 49.3% of moderate activity, and for 34% of no activity; $p = 0.017$).

Walking was associated with item 4 (Have you been afraid that you might become fat (or fatter?)(never for 18.8% of walkers, and for 42.9% of no walkers; $p = 0.019$), item 6 (never for 33.6% of walkers, and for 57.1% of no walkers; $p = 0.024$), item 32 (never for 78.6% of walkers, and for 93% of no walkers; $p = 0.025$), item 34 (Has worry about your shape made you feel you ought to exercise?)(often for 47.2% of walking activity, and for 39.3% of no activity; $p = 0.017$).

Adherence to the Mediterranean diet pattern was associated with item 21 (Has worry about your shape made you diet?)(often for 27.8% of people who were adherent, 34.1% for those who did not adhere; $p = 0.045$).

Discussion

The present study has tested the hypothesis that a relationship does exist between body image and lifestyles of a sample of amateur athletes that are frequent users of a gym. Starting from the point that the body image is multi-dimensional, one can notes that a first definition was made in 1935 by Paul Schilder: "The image of our body that is in our mind is the way in which our body appears" (43). It is fundamental the correspondence between one's own body and the real body, and the assessment of the body perceived in the formation of the body image. The importance one could attribute to the physical appearance and the discrepancy between the perceived body and the ideal body seems to promote the physical activity and healthy lifestyles among young athletes. So, the body image represents the image in our mind of the shape, the dimension and the size of our body and the feelings we have in relation to these characteristics and single parts of the body (44).

In our sample 257 amateur athletes, females were mainly preoccupied of their body image with respect to males in

the previous 4 weeks. Gender differences are in line with previous studies (45). The lack of preoccupation among males could be explained by the fact that they consider the physical issue as a negative argument to discuss (46).

Considering differences between type of occupational activity, students (items 20 and 22) and housewives (items 2,5,6,11,16,19) are more worried, especially among the latter group in which women feel fat, want to lose weight, want to cut some body part. Moreover, considering the civil status similar answers are presented by single and separated people (items 6, 10, 12, 22) that feel less lucky in comparison to other people and feel better when they control their food input.

As far as concerns physical activity, a vast majority of participants declares to be vigorously or moderately active. Differences for vigorous activity were found for gender (males more active), age between 25 and 30 years, and white collars. With increasing age there is the need to have much care of one's body through a vigorous physical activity.

The association between body image and physical activity shows that those that practice vigorous physical activity are often preoccupied seeing excess of fat in other people and have avoided situations in which they should have shown their body to other people. This is in contrast with the results of Homan and Tylka (47) that demonstrate a positive relationship between physical exercise and body image. The high percentage of vigorous physical activity in our sample (83,3%) among males could be linked to the willingness to develop muscles, in line with the traditional male role (23). Those who practice moderate physical activity are often more preoccupied for their body appearance. So, vigorous and moderate physical activity seems associated inversely to the body image perception: more the physical activity, more the need to perform physical activity.

There is evidence that regular exercise improves the pulmonary function and the quality of life of patients with chronic diseases (48, 49), as well as people without a clinical condition (49). And just considering the health related quality of life, the participants shown a good score both for PC and MCS, witnessing the strong relationship between these fields. On the other hand, nutritional habits are not well represented, in line with similar trends in Italy (51).

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