

## Research Paper

## The Development and Standardization of an Indian Positive Body Image Scale: An Exploratory Research

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**ABSTRACT**

**Background:** Body image is an integral component of the self-concept that significantly shapes human functioning and people's life outcomes. Although negative body image is well-studied, there is little research on positive body image. This study examined the basic characteristics of positive body image to standardize a scale for it.

**Methods:** We used an exploratory research design, a variant of mixed methods design. The study was conducted in two phases. In the first phase, 17 men and 18 women aged 21 to 30 years were selected according to the screening criteria based on the results of the body mass index and the Body Appreciation Scale. The semi-structured interviews were conducted, followed by their verbatim description of developing themes and basic descriptions of positive body image. The second phase involved 507 participants (268 males and 239 females) aged 20 to 35 years, who were administered the newly developed positive body image scale and general health and quality of life measures for validation.

**Results:** Several theoretically sound and practically relevant positive body image characteristics were identified. The main themes identified in the first phase were a phenomenon with complex facets, connected to the self, social realities, life outcomes, health practices, and social relevance. The second phase led to developing a new 24-item positive body image scale that included two components: body appreciation and body effectiveness. It had desirable psychometric properties. Test-retest reliability showed significant levels, while correlation coefficients of the derived measure with general health and quality of life demonstrated its validity.

**Conclusion:** A positive body image is a multifaceted construct associated with self-enhancement, health, life success, and relationships. A psychometrically appropriate measure of positive body image was standardized. The study results can have implications for health research and practice.

**Keywords:** Body image, Self concept, Body representation, Body mass index, Qualitative research, General health

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## 1. Introduction

**B**ody image is an inseparable constituent of self-concept which significantly influences human functioning, performance, and quality of life [1, 2]. Body image regulates and impacts interpersonal relationships, self-esteem, eating behaviors, well-being, and other dimensions of human behaviors irrespective of age, gender, cultural background, and personality attributes of individuals. Recent years have witnessed an upsurge in the diversity and sophistication of body image scholarship comprising body image development, difficulties of boys and girls from various cultures, and new assessment tools.

Research shows that body image has significant implications for understanding human behaviors and performance in many individual, interpersonal, and social contexts. Positive body image is a multifaceted and multidimensional construct distinct from negative body image [2]. Various attributes and mechanisms encompass body appreciation, acceptance, coping, body image flexibility, functionality, pride, positive and self-accepting body language, body sanctification, a broader conceptualization of beauty, and body acceptance by others [3]. Positive body image also significantly affects positive human functioning and productivity, spreading across age, gender, and cultures [3, 4].

The scientific study of positive body image attracted less attention compared to negative body image [5, 6] involving different types of psychopathologies such as eating disorders, dysmorphic disorder, etc. employing mostly women participants having affiliations with the Western socio-cultural milieu. It has also been argued that most research has applied quantitative methods, failing to conceptualize the nature and dynamics of positive and negative body image. The research suggests that future studies should employ qualitative or mixed methods to decipher the true nature of body image [6].

Previous positive body image scales such as the body esteem scale [7], the appearance evaluation subscale of the multidimensional body-self relations questionnaire [8, 9], the body esteem scale for adolescents and adults [10], and the body appreciation scale [5] are based on body satisfaction. Furthermore, these scales conceptualized body image as a continuous bipolar construct with positive and negative poles representing body satisfaction and body dissatisfaction, respectively [3]. Recent research has argued that positive and negative body images are different and regulated by different dynam-

ics [6]. These distinctions became evident in qualitative studies of positive body image, which were qualitatively limited and had a formative impact on the conceptualization and measurement of positive body image [11–13]. In addition, these studies have helped to understand and establish the healing, preventive, and nurturing potential of positive body image [3].

It is noticeable that the study of body image is new. Although negative body image is a well-studied phenomenon, there is limited research on positive body image despite its recognized importance for various life outcomes [11, 13]. Several positive body image scales have been developed. The empirical evidence suggests that none of these tools have focused on the attributes of positive body image in depth. Therefore, it is necessary to develop a comprehensive measure of positive body image based on the Indian population. Research suggests that exploratory design, a variant of mixed-methods design, is very useful when the nature and properties of the studied construct(s) are not explicit or established. In other words, the measures or tools have not been standardized, the significant correlates are unknown, or there is no guiding framework or theory [14, 15].

Research on body image applying qualitative studies is limited, and qualitative or mixed methods have been suggested to explain the true nature of positive body image [3]. Current research on the psychology of body image is confined to the quantitative studies of negative body image, employing only female participants belonging mostly to American and Western societies. In this background, the present research attempted to explore the basic nature and attributes of positive body image to standardize a scale of positive body image based on the inherent contents of the qualitative data. The study employed an exploratory mixed methods design which comprised data collection in two phases: The qualitative phase (phase 1) and the quantitative phase (phase 2), with different but mutually inclusive objectives. Based on the insights from identified themes and subthemes of the qualitative phase of the study, a comprehensive positive body image scale was standardized in the study's second phase.

### Study objectives

The first phase of the study aimed to explore the basic themes and descriptive attributes of positive body image with the dual objectives of developing an original understanding of the construal of positive body image (themes) and preparing a list of relevant items for empirical validation of a scale in the second phase of the study.

### Objectives of the quantitative phase of the study

1. To prepare items and standardize a positive body image scale from the descriptions of the qualitative data;
2. To estimate psychometric properties of the positive body image.

## 2. Methods

The study was conducted in two phases: Qualitative and quantitative. The study's first phase used a qualitative research design in which semi-structured interviews were conducted using a pre-developed protocol. The content of the interviews was audio-taped, followed by the production of verbatim inscriptions suitable for thematic analysis according to the established guidelines [16].

The qualitative study results showed that positive body image significantly affects human functioning and productivity, spreading across age, gender, and cultures [3]. The major goal of the study's quantitative phase was to empirically establish its reliability and validity. Initially, a list of 110 items was prepared, followed by face validation by three experts with sufficient psychological, measurement, and research backgrounds. After face validation, only 45 items remained for empirical validation on an adult sample.

### Participants and their recruitment

In the first phase of the study, the basic objective was to collect data as per the interview protocol. In this phase, 152 (80 males and 72 females) participants were chosen through purposive sampling. Of whom, 35 adults, comprising 17 males (Mean±SD 26.29±2.76 y) and 18 females (Mean±SD 24.83±2.43 y) aged 21-30 years, met the inclusion criteria and were allowed to take part in the qualitative phase. The sample size in the qualitative research was determined by the saturation that occurs when no new themes and codes from additional interviews that match the research questions appear. After 31 interviews, saturation was noted, and four additional interviews were conducted to confirm saturation [17]. The study proposal was put before the Ethics Committee of the Department of Psychology, School of Humanities & Social Sciences (Dr. Hari Singh Gour University, Sagar, Madhya, Pradesh, India) for its approval to conduct the study. Body mass index (BMI) or Quetelet index is calculated from a person's mass (weight) and height. BMI is defined as the body mass divided by height squared and is commonly expressed in units of kg/m<sup>2</sup>. According to the World Health Organization (2016), the normal BMI range is 18.50 to 25.00.

The inclusion criteria were as follows: A normal BMI of 18.50-25 [18], apparent normal physical and mental health, age ranging from 20 to 35 years, and high scores on the body appreciation scale [5]. Participants with obese features, apparent clinical mental and physical health conditions, unwillingness to give informed consent, and poorer scores on the body appreciation scale [5] were excluded.

In the quantitative phase, 507 participants were chosen by purposive sampling. Selecting a large effect size of 0.60,  $\alpha=0.05$ , and power =0.95 as the criteria [19], a priori power analysis was performed to estimate sample size to compute correlations among study variables. The projected sample size to achieve this effect size was 152. G\*Power 3 [20] was used to conduct the power analysis. We propose a sample size of 500 sufficient to attain the desired effect size.

### Measures of data collection

#### Qualitative phase

**Semi-structured interview:** A protocol was prepared to conduct semi-structured interviews. The researchers developed a set of pertinent questions for conducting the interview following the criteria of relevance and significance of the items to the field of positive body image. They were based on existing theories and the conclusions of the important selected studies of the field. The following items were included in the semi-structured interview protocol of the qualitative phase.

- 1) Please describe in detail the way you think and feel about your body.
- 2) Describe in detail the importance of positive body image.
- 3) What significant information have you received about your body from your close relatives (family, spouse, boyfriend/girlfriend, etc.)?
- 4) How can you achieve a positive image of your body?
- 5) How does your positive body image influence your social relationships?
- 6) In your opinion, what type of messages about positive body image should society encourage (TV, cinema, magazines, newspapers, etc.)?

**The body appreciation scale:** The body appreciation scale [5] was used to assess the extent to which participants had positive attitudes toward their bodies. The scale was originally in English, first translated into Hindi, followed by a back-translation into English by three researchers. The scale consists of 13 items tapping participants' feelings about their body image (e.g. "i respect my body"). Items were scored on a 5-point scale (1=never to 5=always) and averaged to give a total score (higher scores reflect a greater appreciation of the body). Researchers worldwide have widely used this scale to study positive body image. The Cronbach  $\alpha$  coefficients were reported as 0.92 and 0.94 for males and females, respectively [21].

### 2.2.2. Quantitative phase

**The general health questionnaire:** The general health questionnaire [22] was used to measure the participant's general health. The participants were asked to compare their current psychological and normal states. Four answer options are available for each item. The higher the score, the worse the mental well-being.

**Quality of life inventory:** The quality of life was assessed by the quality of life inventory [23]. This questionnaire consists of 26 items. It comprises four areas: Physical quality of life, psychological quality of life, social quality of life, and environmental quality of life. The rating pattern was based on a five-point scale.

### Study procedure

The study's first phase used a semi-structured interview according to a pre-designed protocol. Before data collection, a rapport was established, and participants were informed about the basic objectives of the study. These questions were asked in the style of a normal conversation. In addition to these questions, the researchers asked some exploratory questions to clarify the questions from the interview. According to the protocol, the participants' interviews were recorded on tape using a recorder available in the mobile phone version Moto G3. The verbatim entries of the recorded interviews were prepared with comments, if any, to facilitate the process of the jurors/experts performing the thematic analysis of the collected data using thematic analysis. All participants' data were organized according to the order of interview points, followed by analysis using the thematic analysis method according to the guidelines of Braun and Clarke [16]. The guidelines include getting to know the data, generating initial codes, searching for themes, reviewing themes, defining and naming topics, and creating the report.

To enhance the reliability and validity of the analysis of qualitative data, to ascertain the procedural details, the efficacy of the items of the interview protocol, and to finalize the actual process of data analysis, researchers involved their research supervisor and one more faculty member of the department in the process of data analysis. These three members read data several times and came up with their independent findings regarding the major theme and sub-themes of positive body image. After they had completed data analysis and reached their themes and sub-themes, a conference of the three was held to check and establish consistency of the descriptions, themes, and sub-themes inherent in the data. It followed a thorough discussion to reach a consensus about the procedural details and ascertain the efficacy of the procedure and items as well. Important modifications, guidelines to be observed in the interview process, the interviewer's role, the interview's place and style, and many other procedural details were clarified, which certainly positively impacted the quality of the data collected in the qualitative phase of the study.

Based on the content descriptions of the transcriptions, 50 items were initially written in Hindi in the quantitative study. After face validation, only 30 items were found suitable for empirical validation. All items were rated on a 7-point scale (1=very strongly disagree, 2=strongly disagree, 3=somewhat disagree, 4=neutral, 5=somewhat agree, 6=strongly agree, 7=very strongly agree). When the initial form of positive body image was identified and managed with the general health questionnaire and quality of life inventory, the participants were addressed individually and debriefed about the basic study goals. Then they were instructed to read the instructions carefully before giving answers to a questionnaire.

## 3. Results

### Qualitative study

The Mean $\pm$ SD scores of body appreciation of the male (Mean $\pm$ SD 56.82 $\pm$ 4.10) and female (Mean $\pm$ SD 56.33 $\pm$ 4.06) participants fell in the inclusion criterion range. In addition, the Mean $\pm$ SD body mass index of the male (Mean $\pm$ SD 23.57 $\pm$ 1.04) and female (Mean $\pm$ SD 21.56 $\pm$ 1.51) participants also signified the normal range. The details of the participants' age, body appreciation scores, and body mass index are presented in Table 1.

Many important attributes of positive body image were found after analyzing the qualitative data. Theme 1 denoted that positive body image is a complex phenomenon that comprises cognitive, emotional, and behavioral components. The scrutiny of the data showed that positive body image has many facets. For example, the participants showed positive thoughts, memory, and decision-making regarding their body attributes. Positive body image facilitates people's satisfaction with life, respect for others and self, and helps build confidence and feel inner comfort. Positive body image comes from spirituality; it is not a matter of social comparison. People with joyous nature have a positive outlook toward their body attributes. Positive body image helps shape mental and physical health. Positive Body image is not only limited to physical fitness but also the manner concerns.

Theme 2 showed that positive body image is important for self-confidence, success in life, and social status. The positive body image of the participants has been found to enhance their self-confidence, success, and social status. These contributions to positive body image were expressed in many ways. For instance, thinking positively about the body increases self-confidence. Individuals with positive body image do not care much about what others think. Positive body image helps to achieve social status. Positive body image is a source of happiness. Positive comments from close relatives help enhance positive body image. Self-respect towards one's body helps maintain a positive body image. Family support enhances the positive experience of the body. Regular health care positively affects body image.

Theme 3 demonstrated that yogic practices, meditation, media, and literature help attain a positive body image. Positive body image can be cultivated by practicing yoga and meditation regularly. Motivational stories, videos, etc. help enhance and maintain a positive body image. Positive health practices facilitate achieving a positive body image. Positive media and literature are important for the development of positive body image. Facing negative messages about body image is important for achieving a positive body image.

Theme 4 showed that positive body image helps enhance and maintain a relationship. Social relationship plays an important role in maintaining a positive body image. Positive body image helps to get prestige in society and improve and maintain relationships in society. Feedback from other people related to the body can affect your relationship. Positive body image helps to attract the opposite gender.

#### Quantitative phase

In the quantitative phase, 507 participants, including 268 men (Mean±SD 26.29±2.75) and 239 women (Mean±SD 24.83±2.43), aged 20 to 35 years, pursuing their undergraduate and postgraduate studies were recruited from various educational institutions of Sagar, Madhya Pradesh, India.

To determine dimensional attributes of the positive body image scale, the scale was administered to 507 adults. Kaiser-Meyer-Olkin's measure of sam-

**Table 1.** Description of the data of the qualitative study (n=35)

Sr. No.	Measures	Gender	Mean±SD	No. (%)
1	Age (y)	Male	26.29±2.67	17(48.57)
		Female	24.83±3.94	18(51.43)
		Total	25.54±2.62	35(100)
2	BAS	Male	56.82±3.97	17(48.57)
		Female	56.33±3.94	18(51.43)
		Total	56.57±3.97	35(100)
3	BMI*(kg/m <sup>2</sup> )	Male	23.57±1.01	17(48.57)
		Female	21.56±1.47	18(51.43)
		Total	22.54±1.62	35(100)

BAS: Body Appreciation Scale; BMI: Body mass index

\*Body mass index was computed as per the method of the World Health Organization (2016)





pling adequacy was above 0.915, which was excellent. Bartlett's test of sphericity was statistically significant ( $\chi^2=4567.75$ ,  $df=276$ ,  $P<0.001$ ). These two criteria were required to conduct factor analysis. The factor structure was computed by the principal component analysis with the varimax rotation method. Six items were excluded from the scale due to their poor loadings. The 24 items are presented in [Table 2](#).

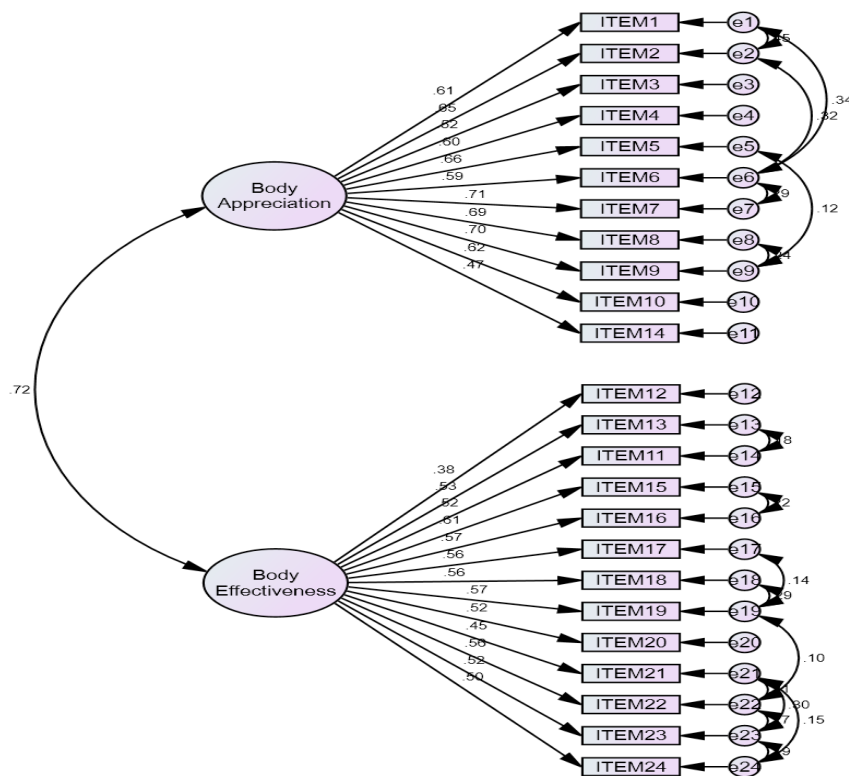
The factor analysis of the scale items helped identify two major factors of positive body image. The measurement model shows the positive body image scale's factor structure and factor loading ([Figure 1](#)).

After close consideration of the contents of items of each factor, they were labeled as body appreciation and body effectiveness. The details of the two components are as follows.

**Table 2.** Items of the positive body image scale

Sr. No.	Item
1	I respect my body and its parts.
2	I feel good about my body.
3	I do not compare my body and its parts to anyone else.
4	My body is attractive.
5	I am satisfied with my body.
6	I think exercise is essential to keep the body healthy.
7	I want people to accept my body as it is.
8	My body makes me self-confident.
9	My body makes me happy.
10	I have so many good qualities in my body.
11	My body has made an important contribution to becoming successful in my life.
12	I think physical beauty has great importance in life.
13	Positive body image is helpful in the adjustment.
14	My body is a gift given by God.
15	My body image helps make social relations.
16	My body image enhances my personality.
17	My body attracts people.
18	The image of my body is helping me in attaining my social status.
19	My body image helps me to take advantage of opportunities in different areas.
20	People respond positively to my body.
21	I am conscious and aware of my body.
22	I follow a systematic routine to maintain my body image.
23	I think sports/gaming is important to maintain body image.
24	I enjoy being part of social gatherings.





**Figure 1.** The measurement model representing the factor structure of positive body image scale



$\chi^2$  (df)=657.04 (235);  $P=0.109$ ,  $\chi^2/df=2.8$ , GFI=0.91, AGFI=0.88, TLI=0.89, CFI=0.92, RMSEA=0.06, SRMR=0.056.

### Body appreciation

Factor 1 items were labeled body appreciation. Appreciation of the body relates to respect, contentment, acceptance, positive feelings, attractiveness, self-reinforcing, and God's endowment of the body and its attributes. This name was appropriate as it conveyed respect for the body, feeling good, non-comparing, attractiveness, high satisfaction with the body and its attributes, nurturing aspects (exercise), desire for acceptance of the real body and its attributes by others, improvement (confidence, happiness), positive perception (many good qualities) and a gift from God. These attributes of positive body image were also reflected in the statements made by participants in the qualitative study. It consisted of 11 items.

### Body effectiveness

This body effectiveness dimension consists of the elements of the body's effectiveness in achieving various life achievements and outcomes, helpful in achieving social praise, opportunity, positive feedback, identity, and positive endeavors. This label was appropriate as body efficiency was reported to be helpful in life success, adjustment, beauty, effective social relationships, effective personality,

attractiveness, social praise and status, life chances, positive reactions from others, familiarity, positive effort (systematic routine), sports/gaming) and positive social and interpersonal outcomes. It consisted of 13 items.

### Psychometric properties

The reliability and validity of the components and overall scale were estimated. The details are as follows.

#### Reliability

The scale includes two dimensions of positive body image: Body appreciation and body effectiveness, which comprise 11 items and 13 items, respectively. Reliability was estimated by calculating the Cronbach  $\alpha$  values of 0.878, 0.844, and 0.903 on body appreciation, body effectiveness, and overall positive body image scales, respectively. The split-half coefficient of the scale was 0.784.

#### Validity

Face validity was estimated using three experts who assessed each item and rated it as valid to measure positive body image. The interrater agreement was 0.747. Con-

**Table 3.** Correlations among the study variables

Sr. No.	Measures	Male		Female		Total	
		r	P	r	P	r	P
1	BA & PHQL	0.231**	0.000	0.290**	0.000	0.235**	0.000
2	BA & PSQL	0.299**	0.000	0.411**	0.000	0.336**	0.000
3	BA & SRQL	0.157**	0.010	0.175**	0.007	0.174**	0.000
4	BA & QOL	0.226**	0.000	0.308**	0.000	0.240**	0.000
5	BA & SS	-0.138*	0.024	-0.119	0.066	-0.140**	0.002
6	BA & D	-0.121*	0.048	-0.127*	0.050	-0.134**	0.004
7	BA & OGH	-0.167**	0.006	-0.191**	0.003	-0.178**	0.000
8.	BE & PHQL	0.298**	0.000	0.374**	0.000	0.329**	0.000
9	BE & PSQL	0.291**	0.000	0.303**	0.000	0.316**	0.000
10	BE & SRQL	0.218**	0.000	0.188**	0.004	0.212**	0.000
11	BE & EQL	0.196**	0.001	0.226**	0.000	0.218**	0.000
12	BE & SS	-0.018	0.772	-0.036	0.580	-0.045	0.325
13	BE & D	-0.028	0.643	-0.043	0.504	0.003	0.947
14	BE & OGH	-0.055	0.369	-0.096	0.138	-0.031	0.508
15	OPBI & PHQL	0.300**	0.000	0.377**	0.000	0.321**	0.000
16	OPBI & PSQL	0.329**	0.000	0.394**	0.000	0.363**	0.000
17	OPBI & SRQL	0.213**	0.000	0.204**	0.001	0.218**	0.000
18	OPBI & EQL	0.234**	0.000	0.295**	0.000	0.255**	0.000
19	OPBI & SS	-0.081	0.189	-0.082	0.205	-0.098*	0.033
20	OPBI & D	-0.079	0.200	-0.091	0.161	-0.065	0.158
21	OPBI & OGH	-0.118	0.054	-0.156*	0.016	-0.108*	0.019



Abbreviations: BA: Body appreciation; PHQL: Physical quality of life; PSQL: Psychological quality of life; SRQL: Social relation quality of life; EQL: Environmental quality of life; SS: Somatic symptoms; D: Depression; OGH: Overall general health; BE: Body effectiveness; OPBI: Overall positive body image

\*P<0.05, \*\*P<0.01

Content validity was estimated by rating each item with a panel of subject matter experts (SMEs) composed of 5 members. The SMEs had extensive research experience in the psychology of body image. Each SME assessed each item individually based on three components: Essential, useful but not essential, or not necessary for measuring the construct. Each item’s content validity ratio (CVR) was calculated using Equation 1:

$$1. CVR = (N_e - N/2) / N/2.$$

The content validity index (CVI) of all scale items was 0.81, indicating the desirable content validity of the scale items. Construct validity was estimated by conducting interviews that included questions about body appreciation and body effectiveness attributes in 10 participants, which was satisfactory.



Criterion validity was measured by calculating a correlation coefficient between the scores for appreciation, body effectiveness, and overall positive body image and scores for physical quality of life, psychological quality of life, quality of life in social relationships, quality of life in the environment, and overall quality of life. In addition, scores for body appreciation, body effectiveness, and the overall positive body scale were correlated with scores for somatic, depression, and overall general health.

Body appreciation exhibited significant positive correlations with the various components such as physical, psychological, social relation, and environmental quality of life of the males, females, and entire participants. Similarly, there were significant positive correlations between the scores of body effectiveness and the scores of physical, psychological, social relation, and environmental aspects of the quality of life of the males, females, and entire participants. The overall positive body image scores and physical, psychological, social relation, and environmental aspects of the quality of life of the males, females, and entire participants also exhibited significant positive correlations (Table 3).

Contrarily, significant negative correlations were found among the scores of body appreciation and the scores of somatic, depression, and general health of the males, females, and entire participants. Body effectiveness and the overall positive body image scores also exhibited the same trends of relationships with various aspects and the overall scores of the general health measure (Table 3).

#### 4. Discussion

The qualitative study results have shown that positive body image is a complex phenomenon shaped and regulated by an intricate interplay of personality attributes, interactions, emotions, cognitions, multiple outcomes, and social influences. The study's findings demonstrated four major themes with many subthemes from the qualitative data's thematic analysis. Theme 1 signifies that positive body image leads to positive thoughts, memory, and decision-making of the participants of both genders. Theme 2 denotes that the participants with perceptions of positive body image report self-confidence, success in life, and social status. Theme 3 indicates that positive health practices such as yogic practices and meditation had important contributions to managing their positive body image. Theme 4 denotes that positive body image helps the participants of both genders develop, maintain, and enhance interpersonal and social relationships.

The results obtained in the present study find sufficient support from previous studies conducted on positive body image. Previous studies have reported that body image is an inseparable constituent of self-concept, affecting human functioning, performance, and quality of life [1]. Positive body image has also been reported to regulate and impact interpersonal relationships, self-esteem, eating behaviors, well-being, and other dimensions of human behaviors irrespective of age, gender, cultural background, and personality attributes of the individuals in previous studies [1]. Like previous findings, the present study reported that positive body image signified perceptual, affective, cognitive, and behavioral body images constituting four major dimensions of positive body image [24]. The present results also exhibit that individuals possessing positive body image show a clear, true perception of body shape, appreciate their natural body shape, feel proud, and accept the uniqueness of their body [24].

Previous researchers have reported many positive attributes and outcomes on positive body image. Similar to the previous findings, the present study shows that positive body image entails optimism, self-esteem, social support, adaptive coping, and weight stability. The major themes and subthemes of the present study have many similarities with the themes reported by previous researchers. A close examination of the qualitative data of the present study has shown that many positive outcomes are reported to be carried with having a positive body image which gets supported by previous studies [25–27]. Similar to the previous findings, the present study also corroborates that the desire to lose weight, look beautiful, be healthy, and be energetic with productive and good performance are closely associated with positive body image, which, in turn, shapes the functioning and performance of the individuals [28]. Previous studies have also reported various components of positive body image, which included body appreciation, body acceptance, inner positivity influencing outer manner, a broad conceptualization of beauty, media literate, unconditional acceptance from others, spirituality/religion, and listening to and taking care of the body [13]. Thus, four themes and many subthemes that emerged from the qualitative data analysis fulfilled the present study's first and big goal.

The quantitative phase of the study showed that the two factors that emerged after factor analysis of the positive body image data were body appreciation and body effectiveness, with 11 and 13 items, respectively. Body appreciation reflects respect, contentment, acceptance, positive feelings, attractiveness, self-reinforcing effects, and

God's endowment of the body and its attributes. Similarly, body effectiveness refers to the body's effectiveness in attaining various life achievements and outcomes and helps achieve social praise, opportunity, positive feedback, identity, and positive endeavors. The reliability coefficients of the two components and the entire scale were calculated by Cronbach  $\alpha$ , indicating satisfactory statistical significance levels. The coefficients of scale validity were estimated by calculating the correlation coefficients between scores of two components and overall positive body image and quality of life scores [23] and general health questionnaire scores [2, 22].

The findings of the study's second phase show that scores of body appreciation, body effectiveness, and overall positive body image have significant positive correlations with scores on physical, psychological, social relationship, and environmental dimensions of quality of life in males and females participants. Regardless of gender, body appreciation, body effectiveness, and overall positive body image showed significant positive correlations with the physical, psychological, social relationships and environmental aspects of quality of life. In contrast, significant negative correlations were found between body appreciation and somatic, depression, and general health in male and female participants, except for somatic symptoms in females. These findings were also true when all data from male and female participants were pooled on different measures.

There were significant negative correlations between body appreciation and somatic symptoms, depression, and general health in males and females and all participants—except between body appreciation and somatic symptoms in female participants, for which a non-significant correlation was observed. The non-significant negative correlations were recorded between physical activity and somatic symptoms, depression, and general health of men and women and all participants. In contrast, overall positive body image and somatic symptom scores had a significant negative correlation for all participants with non-significant negative correlations for men and women. The overall positive body image also showed non-significant correlations with depression in the three subgroup. Significant negative correlations were observed among the overall positive body image scores and the general health scores of the male, female, and all the participants. The findings show that positive body image significantly shapes the participants' quality of life and general health.

Researchers have recognized that measuring positive body image is important [3]. Several positive body image scales have been developed, and the empirical evidence suggests that none of these tools has been used in an in-depth qualitative study. Therefore, developing a comprehensive measure of positive body image is necessary. To this end, we aimed to create a scale on positive body image, adopting an exploratory design.

The findings of the study's first phase facilitated the emergence of four significant themes with a set of relevant attributes of positive body image. The qualitative study results show that positive body image significantly shapes the nature of thoughts, memory, and decision-making of the participants of both genders. Moreover, these perceptions of positive body image, in turn, shape many positive life outcomes such as self-confidence, success in life, and social status. It was also evident that positive health practices such as yogic practices and meditation significantly contribute to managing the nature and dynamics of positive body image. In addition, positive body image facilitates participants of both sexes to develop, maintain, and enhance interpersonal and social relationships. Many descriptive attributes of positive body image emerged in the first phase of the study that acted as the background for preparing the items of the scale.

The study's first phase also shows that positive body image is associated with many positive life outcomes. The present study's results have been illustrated in many previous studies that have suggested similar benefits of having a positive body image. For example, research has suggested a positive body image to be significant in facilitating inner resources for optimizing health and well-being for all sorts of people [29]. The close association between body image and psychological well-being, such as self-esteem, life satisfaction, and lower stress, has also been observed [30]. Swami et al. have suggested that body image and subjective happiness are closely associated, as body appreciation strongly predicts subjective happiness [27]. Contrarily, a lower positive body image score may negatively affect the quality of life [31–33].

The major drives behind body image affecting human functioning are people's desire to lose weight and look beautiful, healthy, and energetic with productive and good performance. It has been reported that positive body image and dissatisfaction play an important role in developing obesity, depression, and mental disorders of various kinds. Body image perceptions have been reported to be associated with obesity and depression [28]. Additionally, some Indian studies have reported that positive body image is related to other significant dimensions of human functioning. For example, chron-

ic health conditions [34, 35], female identity [36], and adolescent girls' self-image [37] are linked with a positive body image.

Moreover, the nature of body image perceptions has been reported to be linked with several healthy and unhealthy behaviors. It has been argued that a higher positive body image may cause people to internalize positive health behaviors [38] and engage in sports activities [39, 40]. The differences in the mean scores of positive body image, quality of life, and general health of the participants with neuroticism and extraversion can be explained in terms of differences in their basic cognitive, emotional, and behavioral predispositions reported by previous researchers. It has been argued that dissimilarities in personality traits produce a difference in the patterns of affection, behavior, cognition, desires [41], and environmental responsivity [42, 43]. These data show that positive body image significantly impacts understanding positive and negative life outcomes.

The study's second phase was to develop and standardize a positive body image scale for Indian adults. The quantitative phase of the study resulted in the development of a 24-item scale with two components: Body appreciation (11 items) and body effectiveness (13 items). Appreciation of the body reflects respect, contentment, acceptance, positive feelings, attractiveness, self-reinforcing effects, and God's endowment of the body and its attributes. Likewise, body effectiveness shows the body's efficacy in attaining various life achievements such as social praise, opportunity, positive feedback, identity, and positive effort. The findings also showed the reliability coefficients for the two components and the overall scale were satisfactory. In addition, its validity was also satisfactory, obtained by calculating correlation coefficients between scores of the two components and overall positive body image and scores on the general health questionnaire [22] and quality of life [23]. Its predictive power was verified in a recent study using the same measure of general health in Indian participants [2].

The study findings may have important theoretical and practical implications for the field of body image, school interventions, the psychology of adolescents and sports people, and mental health interventions. In addition, the findings may also find their implications for promotive and preventive health purposes. Like other scientific endeavors, some limitations have also marred the study. For example, some limitations were the lack of diverse groups of participants, a small sample for the qualitative research, participants from a single culture, only an adult age group, and a limited number of variables for the study's quantitative phase.

## 5. Conclusion

Using an exploratory research design, the study conceptualizes the positive body image as an independent construct regulated by unique processes and mechanisms. The qualitative phase of the study revealed complex facets of positive body image concerning self and social realities. A positive body image carries beneficial health practices and social relevance that shape meaningful life outcomes for adults. It helped create an item pool that was standardized in the next phase of the study. The quantitative phase culminated in developing a 24-item positive body image scale with two factors: Body appreciation and body effectiveness, with desirable psychometric properties and predictive power.

## Ethical Considerations

### Compliance with ethical guidelines

The study was approved by the Ethics Committee, Doctor Hari Singh Gour University, Sagar, 470003, Madhya Pradesh, India.

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### Authors' contributions

The authors equally contributed to preparing this article.

### Conflict of interest

The authors declared no conflict of interest.

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