

Psychometric Properties of the Perceived Subjective Age Scale in The Palestinian Environment



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Abstract

The study aimed to examine the psychometric properties of the perceived subjective age scale in the Palestinian environment. To achieve this goal, the actual study sample consisted of (366) persons whose ages ranged from (40-65) years in the southern governorates of Palestine for the year 2022, who were randomly selected. The validity of the scale was verified using the arbitrators' sincerity, internal consistency, structural validity, and peripheral comparison (discriminatory) validity. The stability of the scale was verified by two methods, Cronbach's alpha coefficient, and spilt half method. The results indicated that the internal consistency validity coefficients ranged (0.328 - 0.769), and the structural validity ranged (0.668 - 0.851), while the validity of the spilt half method comparison obtained a significance level (0.01). Cronbach ranged (0.809 - 0.910).

Keywords: Psychometric properties; perceived- subjective age- scale; Palestinian

Introduction

According to many different theoretical frameworks related to the importance of a person's sense of self and what this feeling dictates in supporting mental health or negatively affecting it, many studies have found that the person's perceived subjective age is one of the main determinants of psychological well-being and life satisfaction this study seeks to prepare and design a scale to measure the subjective age by identifying its main dimensions and the items of every single dimension and examining its reliability and validity. Accordingly, the research problem can be illustrated by the following questions: -

- What is the validity coefficient of the perceived subjective age scale among the study sample?
- What is the reliability coefficient of the perceived subjective age scale among the study sample?

The current study is considered as a serious attempt to build a scale of perceived subjective age, because the Arab library lacks

such a scale at the time this term began to take interest in the field of psychology in general and mental health in particular. This variable (perceived subjective age) has very important implications, in mental health of individuals. and it is considered a qualitative addition in the field of psychometry and psychology. Therefore, the main aims of the study are to detecting the validity and reliability coefficient of the perceived subjective age measure.

There are many terms associated with the concept of human age in general, including chronological age, [1] which refers to the age of the individual from the moment of birth until the current age, as well as mental age, which refers to the mental abilities possessed by the individual, which is measured by intelligence measures such as the Stanford-Binet scale and the Wechsler scale, [2] whose results indicate that The extent to which an individual possesses mental abilities that may be greater or younger than his age. There is also the so-called biological age, which refers to the functional capabilities of the various organs of the body and

the consistency of the performance of these functions to the age group to which the individual belongs. It is worth noting that there is another term for age from the subjective psychological aspect, where the subjective psychological age refers to the individual's feeling of his age compared to his real chronological age. There are individuals who feel that they are older than their real chronological age, while others feel that they are younger than their real chronological age [3].

The concept of subjective age, also known as age identity, cognitive age or perceived age, provides a multidimensional view of the aging process and encompasses more social, psychological and personal meaning than chronological age [4]. After the age of 40, people have reported feeling, on average, 20% younger than their chronological age [5]. Dimakakos, Gjonca and Nazroo (2007) suggested that age perceptions and age self-perceptions (age identity) are in part shaped by dynamic interactions with social and cultural systems that frame our understanding of age. If people tend to feel younger than they are, this implies that they have a mental representation of age against which to compare their own current age status [6]. Also called perceived age, self-perceived age, or subjective age-awareness, it is a concept that captures the subjective perception of the process of aging and measures the subjective perception of age by assessing how old a person feels, thinks, or appears as a phenomenological variable to study outcomes such as psychological well-being, life satisfaction or Public health [7].

There are reasons to expect that subjective age may be related to frailty, given that subjective age is associated with health status, behavioral, cognitive, and biological processes that influence frailty. People with a younger subjective age have a better physical function, including higher scores for activities of daily living (ADL) or instrumental activities of daily living (IADL) [8] stronger grip strength and faster walking speed [9]. Subjective age is also a significant predictor of many psychological factors among older adults. Previous studies have shown that individuals with younger subjective age tend to have better mental health. Specifically, younger subjective age was associated with fewer depressive [10] symptoms less stress and less loneliness. Previous studies have found that younger subjective age is associated with better cognitive functions. Older adults who felt younger than their chronological age showed better long-term memory performance and executive function 10 years later, even after adjusting for chronological age and other demographic and health variables [11]. Frailty is multifactorial in etiology, and physical, psychological and cognitive functions are all risk factors of frailty among older adults. Therefore, subjective age may be a marker of frailty. Frail older adults may feel older than their chronological age, because weakness, exhaustion, slow gait, and low physical activity are part of frailty syndrome [12].

The search for subjective age (SA) psychological age (PA) or perceived age is driven by the basic assumption that how

individuals interpret and assess old age is a major component of their identity and important to their psychosocial adjustment [13]. A study [14] also reported that the elderly tend to feel younger than they are and that this discrepancy between the feeling of age and chronological age increases with age. In the study of (Rubin & Berntsen, n.d.) the study showed that adolescents feel older, this pattern was consistent with the idea of the desired age that people of all ages seek when reporting the age, they feel [15].

The idea of subjective age first emerged in the field of gerontology to explain the discrepancy between how doctors perceive older patients and how those patients perceive themselves [16]. Whereas geriatric physicians generally describe their patients with stereotypical traits associated with old age (e.g., tired and frail), their patients often describe themselves with stereotypical traits reflecting young age (e.g., energetic and lively). Rather than being an inconsequential subjective perception, patients' subjective age predicts a wide range of critical outcomes, including patients' life satisfaction, coping strategies, psychological function [17].

Feeling younger than one's chronological age is considered a protective factor to buffer against the negative effects of aging, [18] such as old-age stereotypes and social stigma [19]. Subjective age has been considered as a biopsychosocial marker of aging that can predict an individual's health condition. A large body of literature has shown that older subjective age is associated with a series of negative health outcomes, including poorer mental health, worse physical, functional and cognitive health [20]. There are reasons to expect that Perceived psychological age may be related to frailty, given that subjective age is associated with health status, behavioral, cognitive, and biological processes that influence frailty. People with a younger subjective age have a better physical function, including higher scores for activities of daily living (ADL) or instrumental activities of daily living (IADL) stronger grip strength and faster walking speed [21]. Subjective age is also a significant predictor of many psychological factors for people. Previous studies have shown that individuals with younger subjective age tend to have better mental health. Specifically, younger subjective age was associated with fewer depressive symptoms, less stress and less loneliness. Previous studies have found that younger subjective age is associated with better cognitive functions ([22]).

There are many factors that influence psychological age and how it is related to subjective well-being (Figure 1). Some factors, so called non-modifiable factors, cannot be easily changed with behavioral modifications or therapeutic interventions [23]. non-modifiable factors include genetic predisposition, parental age, family members' age of death, children's' age, retirement age, and average life expectancy in the country. However, there are many more factors that can be modified to reduce psychological age. These factors include health status and disabilities, physical activity, longevity expectations, education, biomedical knowledge,

work, environment, psychological support, social relationships, and personal beliefs. All these factors may affect psychological age, which in turn may influence overall satisfaction with life.

We propose that these modifiable factors could be used for the development of psychological aging clocks, which will require further study [24].

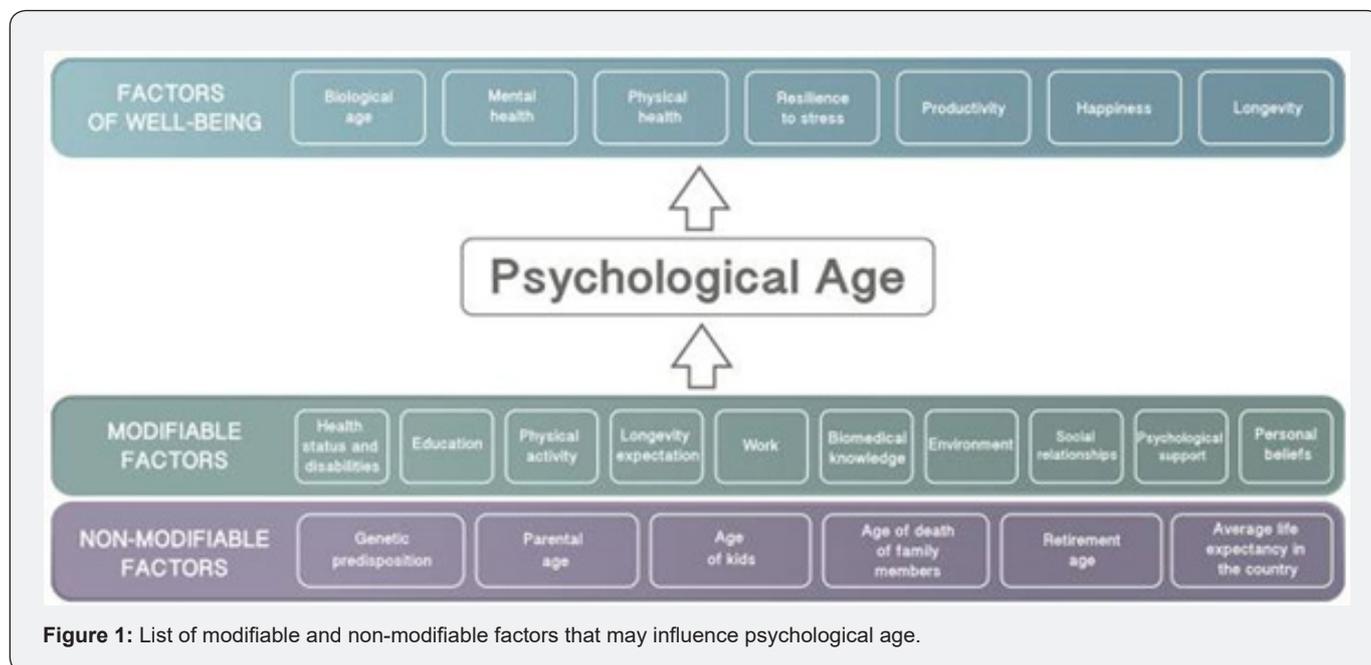


Figure 1: List of modifiable and non-modifiable factors that may influence psychological age.

Through research in psychological literature, the researchers noticed the presence of some scales prepared by specialists, psychologists and researchers in order to determine the psychological age, which would determine the person’s psychological age compared to his real age with ease and ease, and some of them may depend on asking a set of questions or offering A collection of pictures, a conversation, an analysis of a situation or a story, and other means and tests, including studies and measures.

One of previous studies which aimed to build the Age Self-Identity Scale, which is a five-component tool designed to assess how old people usually feel. (1) of the same age, (2) somewhat older than his age, or (3) much older than his age. The items were combined into one average score on the Psychological Age Scale. A higher score means an older subjective age. In this study, stability of the scale was done by Alpha Cronbach method, and the reliability percentage was (0.70), which indicates the stability of the scale. The validity was also confirmed by the exploratory factor analysis method, and the percentage reached (0.904), which confirms the validity and reliability of the prepared psychological age scale [13].

Another study aimed to measure subjective age by asking if many people feel older or younger than they actually are. Write down the age (in years) that you feel most of the time. Respondents to the question who felt that their chronological age was at least one year younger than their chronological age were considered to be younger than their chronological age. Respondents who

felt that their chronological age was at least one year younger than their chronological age They reported feeling at least one year older than their chronological age and considered to have a subjective age greater. Based on the subjective age answers, the study sample was divided into three sub-samples: (Younger than his age, the same age, and Older than his age [25].

Finally, the study of [26] aimed to identify the subjective age of middle-aged and elderly people with low incomes in rural Burkina Faso and to identify the relationship between subjective age and quality of life and compare the results with other foreign studies. The study sample consisted of (3028) , of adults at the age of (40) years from northwestern Burkina Faso, and the data were collected by the Depression Scale, the Quality of Life Scale of the World Health Organization and the Cognitive Behavioral Social Examination Tool, and the results showed: The respondents felt that they were younger by (3%), (SD = 0.13) of their chronological age, depression, movement speed, walking, and quality of life were also associated with psychological subjective age with younger adults [26].

perceived subjective age measurement Subjective age refers to the extent to which people feel younger or older than their chronological age and accounts for the idiosyncratic experience of aging [27] Subjective age is most commonly measured by asking how old someone feels, also known as felt age A tendency to report a younger felt age has been referred to as the “subjective age bias [28] and has been widely replicated in research involving older adults Like chronological age, subjective age contributes

to a range of developmental outcomes. People who feel younger are usually better off than those who feel their actual age or older. For instance, one of the only meta-analyses on subjective age, to the best of our knowledge, explored the longitudinal effect of subjective age on future health and longevity among adults (average age 57–85 years; [28]). It showed that feeling younger is associated with improved physical health and longevity. In addition to its relation to health and survival, a younger subjective age has been associated with important developmental processes, such as enhanced subjective well-being, better performance on tests of cognition and experiencing fewer depressive symptoms. The aim of the current meta-analysis is to examine the association between subjective age and these constructs [29].

Relying on the Psychological Subjective Age Scale [17] published in the study Sharon Avidor, subjective age was assessed by five statements regarding subjective perceptions of age: (a) Feeling of age: In any case I feel as though I was..., (b) Apparent age: "I look as if I...", (c) Behavioral age: "I act as if I were...", (d) Age of interests: "My interests are mostly like I am.", and (e) Vitality Age: "I feel energetic as if I...", compared to the individual's age group. Answers were provided on a three-point scale (1-3) ranging from (younger than my age, the same age as me). Our analyses were initially based on separate items. In subsequent analyses, the mean scores for the five items were used as a composite personal age score, with a higher score reflecting a higher subjective age compared to the individual's chronological age. We referred to the aggregated scale as a quantitative score. The stability coefficient and scale were confirmed on the stability coefficient of Cronbach's alpha method, which amounted to (0.33) [30].

subjective or self-perceived age has been measured in several ways, ranging from individual items to a multi-item or multi-dimensional scale with sub-components such as psychological age and physical age and subjective age may be reported in years (or individuals might rate their subjective age relative to their chronological age on a scale ranging from "much younger than my age" to "much older than my age" and the study question was directed in response to the question, "Many people feel younger or older than they are." Actually. How old do you feel?" (Much younger than me, the same age as me, much older than me [31].

The researchers believe that the psychological age measurement is based on the psychological state of the individual and on the experiences, and life situations that he or she went through during his or her previous life. Also, the family and practical events that formed his personality have a significant impact on his psychological state, either he is negative and sees life in a negative way or he is a cheerful and spontaneous person, and by monitoring some psychological tests, the researchers noticed the emergence of a series of tests developed by psychologists to know the psychological age, which in turn determines the person's psychological age compared to his chronological age,

and some of them were based on asking a series of questions, or asking one question Which is the age you feel, or displaying a series of pictures, conducting a conversation, analyzing an event or a story, and other broad methods and tests, all of which focus on discovering the individual's level of self-awareness and his perceived social awareness, as well as the perceived health and physical awareness, which is the individual's personal opinion about his age or his inner sense of self.

Research Method

Participants' Characteristics

The study population consists of all community members in the southern governorates of Palestine for the year 2022, whose ages range from 40-70 years.

Sampling Technique and Procedure

To represent the study population a random stratified sample was selected, From all members of society in the southern governorates of Palestine for the year 2022, whose ages range from 40-65 years.

Research Location and Time

The current study was conducted in the, Gaza strip-Palestine for the year 2022.

Sample Size

The actual study sample consisted of (366) community members in the southern governorates of Palestine for the year 2022, and the following table shows the frequencies and percentages of the distribution of sample members according to a number of independent taxonomic variables, as follows:

Procedure and Methods of Data Collection

To achieve the objectives of the current study, the researchers prepared a self-perceived age scale, after reviewing the educational literature and previous studies related to the subject of the study. Identifying the main dimensions of the scale, drafting the items that fall under each dimension. The number of the scale items after its final formulation reached (34) items distributed over three dimensions, where each item was given a weight listed according to a three-tiered scale (Younger than my age, same my age, older than my age) the following weights were given (1, 2, 3) Appendix No. (1) shows the scale in its final form. The scale was distributed to all sample members to collect the necessary data for the study. The scale was divided into two parts as follows: The first part: contains the general characteristics of the study sample. The second section: consists of (34) items divided into three dimensions as follows: the first dimension is perceived self-awareness (12), items and the second dimension is perceived social awareness (10), items and the third dimension is perceived physical health awareness (12), items.

Result

Instrument Validity and Reliability

The validity of the tool means: that the scale of the tool measures what they were designed to measure, and the researchers verified the validity of the tools in four ways:

Interrater Validity

The tool was presented to a group of university professors who are specialists, where they expressed their opinions and observations about the appropriateness of the items of the tools, and the extent to which the items belong to the tools, as well as the clarity of its linguistic formulations.

The Validity of the Internal Consistency

The internal consistency of the scale was verified by applying the scale to the study sample, and the Pearson correlation coefficient was calculated between the degrees of each dimension of the scale and the total score of the scale. (SPSS).

Table 2 shows that the correlation coefficients between each of the dimension's paragraphs and the total score of its paragraphs are significant at the level of significance (0.01), and thus the dimension's paragraphs are considered valid for what they were

designed to measure.

Table 3 shows that the correlation coefficients between each of the dimension's paragraphs and the total score of its items are significant at the level of significance (0.01), and thus the dimension items are considered valid for what they were designed to measure.

Table 4 shows that the correlation coefficients between each of the dimension items and the total score of its items are significant at the level of significance (0.01), and thus the dimension items are considered true for what they were designed to measure.

The Validity of the Constructive Validity

In order to verify the structural validity of the dimensions, the researchers calculated the correlation coefficients between the degree of each of the dimensions of the scale in the total score of the scale, and Table 5 illustrates this

Table 5 shows that the correlation coefficients between each of the dimension paragraphs and the total degree of its paragraphs are significant at the level of significance (0.05, 0.01), and thus the dimension paragraphs are considered true for what they were designed to measure.

Table 1: It shows the distribution according to the main characters of the study sample.

Gender	Frequency	Percent
Male	225	61.5
Female	141	38.5
Total	366	100
Age	Frequency	Percent
Age40-45	102	28
Age46-51	90	24.5
Age52-57	85	23.2
Age58-65	89	24.3
Total	366	100

Table 2: The correlation coefficient for each of the items: the perceived personal self-awareness with the total degree of the dimension.

	Male N=255		Female N=141		Male and Female N=366	
	Pearson Correlation	p-value	Pearson Correlation	p-value	Pearson Correlation	p-value
a1	.435**	<0,01	.541**	<0,01	.480**	<0,01
a2	.456**	<0,01	.451**	<0,01	.454**	<0,01
a3	.629**	<0,01	.737**	<0,01	.676**	<0,01
a4	.506**	<0,01	.634**	<0,01	.558**	<0,01
a5	.699**	<0,01	.639**	<0,01	.673**	<0,01
a6	.674**	<0,01	.719**	<0,01	.687**	<0,01
a7	.608**	<0,01	.629**	<0,01	.614**	<0,01
a8	.639**	<0,01	.694**	<0,01	.661**	<0,01
a9	.602**	<0,01	.593**	<0,01	.597**	<0,01

a10	.513**	<0,01	.522**	<0,01	.515**	<0,01
a11	.576**	<0,01	.443**	<0,01	.516**	<0,01
a12	.471**	<0,01	.404**	<0,01	.443**	<0,01

*Correlation is significant at the 0.05 level

**Correlation is significant at the 0.01 level

Table 3: The correlation coefficient of each item of the: perceived social awareness with the total degree of the dimension.

	Male N=255		Female N=141		Male and Female N=366	
	Pearson Correlation	p-value	Pearson Correlation	p-value	Pearson Correlation	p-value
a13	.550**	<0,01	.538**	<0,01	.539**	<0,01
a14	.574**	<0,01	.714**	<0,01	.630**	<0,01
a15	.615**	<0,01	.675**	<0,01	.635**	<0,01
a16	.645**	<0,01	.665**	<0,01	.659**	<0,01
a17	.645**	<0,01	.639**	<0,01	.648**	<0,01
a18	.640**	<0,01	.732**	<0,01	.685**	<0,01
a19	.651**	<0,01	.658**	<0,01	.653**	<0,01
a20	.654**	<0,01	.721**	<0,01	.681**	<0,01
a21	.622**	<0,01	.493**	<0,01	.574**	<0,01
a22	.535**	<0,01	.328**	<0,01	.455**	<0,01

*Correlation is significant at the 0.05 level

** Correlation is significant at the 0.01 level

Table 4: Correlation coefficient for each of the items in the: perceived physical health awareness with the total degree of the dimension.

	Male N=255		Female N=141		Male and Female N=366	
	Pearson Correlation	p-value	Pearson Correlation	p-value	Pearson Correlation	p-value
a23	.681**	<0,01	.456**	<0,01	.616**	<0,01
a24	.691**	<0,01	.537**	<0,01	.646**	<0,01
a25	.626**	<0,01	.499**	<0,01	.588**	<0,01
a26	.655**	<0,01	.592**	<0,01	.629**	<0,01
a27	.676**	<0,01	.578**	<0,01	.647**	<0,01
a28	.722**	<0,01	.620**	<0,01	.689**	<0,01
a29	.725**	<0,01	.655**	<0,01	.699**	<0,01
a30	.769**	<0,01	.597**	<0,01	.711**	<0,01
a31	.684**	<0,01	.505**	<0,01	.622**	<0,01
a32	.713**	<0,01	.592**	<0,01	.665**	<0,01
a33	.707**	<0,01	.725**	<0,01	.711**	<0,01
a34	.694**	<0,01	.624**	<0,01	.670**	<0,01

*Correlation is significant at the 0.05 level

** Correlation is significant at the 0.01 level

Table 5: The structural validity of the scale.

	Male N=255		Female N=141		Male and Female N=366	
	Pearson Correlation	p-value	Pearson Correlation	p-value	Pearson Correlation	p-value
perceived self-awareness	.843**	<0,01	.873**	<0,01	.851**	<0,01
perceived social awareness	.790**	<0,01	.668**	<0,01	.737**	<0,01
perceived physical health awareness	.777**	<0,01	.701**	<0,01	.749**	<0,01

* Correlation is significant at the 0.05 level

** Correlation is significant at the 0.01 level

Validity of the Peripheral Comparison (Discreminative Validity) of the Scale

It is clear from the previous table that the level of statistical significance for the value of (T) in the scale is statistically significant at the level (0.01), which indicates the validity of the scale on the actual distinction between the high and low degrees between the two groups.

Reliability

Split-Half Coefficient and Cronbach's Alpha Coefficient

The scores of the exploratory sample were used to calculate the reliability of the scale by the half-split method, where the researchers divided the scale into two halves, the singular items versus the even items, by calculating the correlation coefficient

between the two halves, then the length was adjusted using the Spearman-Brown equation and the reliability also calculated by Cronbach's alpha coefficient and (Table 7) shows the results: It is evident from Table 7 that the stability coefficients by the Cronbach's Alpha method ranged between (0.809 - 0.910) and by the spilt half method ranged between (0.692 - 0.900), and this indicates that the scale enjoys a high degree of stability.

Interpretation of Scale Criteria

The interpretation of the scale score and classifications were calculated by Calculating the range of raw scores, which is equal to the largest score on the scale and the lowest one, so the range of scores on the perceived subjective age scale is $102 - 34 = 68$ After that, the degree range was divided along the category $68/3 = 22.6$, and after reparation of fractions, the following table shows the classifications criteria as follows (Table 8):

Table 6: It shows the results of the peripheral comparison between the scores that represent 27% of the high and those that represent 27% of the low of the total in the scale.

			N	Mean	Std. Deviation	T	P-Value
Male	perceived self-awareness	high	61	29.295	4.228	14.124	<0,01
		low	61	19.918	3.002		
Female		high	38	31.079	2.561	17.445	<0,01
		low	38	19.105	3.367		
Male and Female		high	99	29.98	3.766	21.009	<0,01
		low	99	19.606	3.155		
			N	Mean	Std. Deviation	T	P-Value
Male	perceived social awareness	high	61	24.262	3.265	14.827	<0,01
		low	61	16.41	2.539		
Female		high	38	25.842	3.054	7.731	<0,01
		low	38	18.605	4.896		
Male and Female		high	99	24.869	3.263	15.218	<0,01
		low	99	17.253	3.762		
			N	Mean	Std. Deviation	T	P-Value

Male	perceived physical health awareness	high	61	31.049	4.595	17.704	<0,01
		low	61	18.443	3.133		
Female		high	38	25.789	5.836	7.012	<0,01
		low	38	18.026	3.537		
Male and Female		high	99	29.03	5.692	16.275	<0,01
		low	99	18.283	3.283		
			N	Mean	Std. Deviation	T	P-Value
Male	Total scale	high	61	84.607	8.03	23.994	<0,01
		low	61	54.77	5.463		
Female		high	38	82.711	6.79	18.139	<0,01
		low	38	55.737	6.159		
Male and Female		high	99	83.879	7.599	30.047	<0,01
		low	99	55.141	5.729		

Table 7: It shows the correlation coefficients between the two halves of each dimension of the tool as well as the tool as a whole.

Male N=255	No. Of Items	Cronbach's Alpha	Correlation Between Forms	Spearman-Brown Coefficient
perceived self-awareness	12	0.809	0.556	0.714
perceived social awareness	10	0.824	0.529	0.692
perceived physical health awareness	12	0.812	0.595	0.746
Total	34	0.821	0.71	0.83
Female N=141	No. Of Items	Cronbach's Alpha	Correlation Between Forms	Spearman-Brown Coefficient
perceived self-awareness	12	0.902	0.706	0.828
perceived social awareness	10	0.822	0.617	0.763
perceived physical health awareness	12	0.91	0.819	0.9
Total	34	0.878	0.792	0.884
Male And Female N=366	No. Of Items	Cronbach's Alpha	Correlation Between Forms	Spearman-Brown Coefficient
perceived self-awareness	12	0.814	0.614	0.761
perceived social awareness	10	0.817	0.664	0.798
perceived physical health awareness	12	0.88	0.68	0.81
Total	34	0.898	0.807	0.893

Table 8: The following table shows the classifications criteria.

Classification	Raw Scores
Younger than his-her age	34-56
The same age	57-79
Older than his-her age	80-102

Discussion

As mentioned above the validity of the scale was verified using the arbitrators' sincerity, internal consistency, structural validity, and peripheral comparison (discriminatory) validity. The stability of the scale was verified by two methods, Cronbach's alpha coefficient, and spilt half method. The results indicated that the internal consistency validity coefficients ranged (0.328

- 0.769), and the structural validity ranged (0.668 - 0.851), while the validity of the spilt half method comparison obtained a significance level (0.01). Cronbach ranged (0.809 - 0.910) the researchers think that this is the first attempt to build and standardize a fully mature scale composed of 3 main dimensions that cover 34 items such dimensions were concluded from the literature and previous researching attempts in this regard, and the

researchers think that such scale is more realistic to measure the perceived subjective age in statistical and psychometric method, as the current common approach according to the literature and the previous studies in this regard is to measure the subjective age by asking the respondent how old they feel, known as their “felt age” [31]. The tendency of people to report a felt age younger than their chronological has been referred to as the “subjective age bias”, and tends to increase in later adulthood [32]. Indeed, there is a growing body of cross-sectional and longitudinal studies [8] consistently reporting chronological age to be the strongest and most robust predictor of subjective age, with most people in middle and older adulthood feeling younger than they are [33].

Conclusion

Conclusion and recommendations: according to the research outcomes the scale of perceived subjective age has a high degree of validity, stability and validity of the peripheral comparison, which indicates that the scale has a high ability to classify individuals according to perceived subjective age, either older than their age or younger than their age or the same age. The study recommends giving more attention to this variable (perceived subjective age), because of its importance in the field of mental health in general and personality in particular.

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