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Self-esteem and assertiveness in medical students in Casablanca, Morocco



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Abstract

Background Self-esteem is a determining factor of good mental health. Medical students need assertiveness in interpersonal interactions with colleagues, patients, and families. This study aims to assess self-esteem and assertiveness in medical students in Casablanca, Morocco; the relationship between these two concepts, on the one hand, and with anxiety and depression on the other hand.

Materials and methodology A cross-sectional study was conducted at the Faculty of Medicine in Casablanca, Morocco. The study used an anonymous self-questionnaire that included Rosenberg Scale and Rathus Scale in order to assess self-esteem and assertiveness, respectively, and HADS Scale to assess depression and anxiety.

Results A percentage of 54% of students in our study showed low-to-very low-self-esteem and 70% of students were not assertive. We found a strong relationship between self-esteem and assertiveness (p < 0.001), self-esteem and depression (p < 0.001), self-esteem and anxiety (p < 0.001), assertiveness and depression (p < 0.001), and assertiveness and anxiety (p < 0.001).

Conclusions Globally, self-esteem and assertiveness of Moroccan medical students were low in more than half of the students. Moreover, there was a significant relation between these concepts, on the one hand, and between them and anxiety and depression on the other hand. Students need to be valued and their efforts recognized during their studies. Therapeutic strategies should be used when necessary.

Keywords Self-esteem, Assertiveness, Medical students, Anxiety, Depression

Introduction

Self-esteem is a subjective evaluation that one has of his or her own worth [1]. It is a determining factor of good mental health [2]. Some authors define it as a conscious perception of one's own qualities [3]. However, it is a more complex phenomenon, impalpable, and discrete, which might be conscious or not [4]. High self-esteem does not involve a feeling of superiority towards others; it is a feeling of acceptance and respect towards

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nent of self-concept [5].

oneself [5]. Self-esteem is a trait that is stable over time [6], although it can be modified by life events [7]. It is

basically a different construct from self-concept, which

refers to several multidimensional self-perceptions, such

as the knowledge individuals have about themselves,

like their name, beliefs, appearance, behavior, etc. Self-

esteem represents the affective and evaluative compo-

Assertiveness, although closely related to self-esteem,

is a different construct. It is the ability to express one's emotions, thoughts, and opinions, to stand up for one's

rights while respecting the rights of others, in a direct,

honest, and appropriate manner [8]. Assertiveness may

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come naturally to some, but it is mainly a skill that can be learned. People who master this skill are able to significantly reduce the amount of interpersonal conflict in their lives, thereby reducing a major source of stress [9].

The psychological status of medical students is subject of growing interest [10]. Numerous studies have shown a significant prevalence of psychological disorders among medical students in different countries [10, 11]. Mental health problems in medical students may impact their ability to learn and their subsequent adjustment to the physician role [12] and negatively impact patient care [13]. Medical students tend to have lower psychological well-being than their peers in the general population [14]. Moreover, they have a significant prevalence of anxiety and depression [15]. Medical studies are longer than the average university studies and more stressful. The most common stressors reported in the literature are workload, sleep deprivation, dealing with difficult patients, poor quality of training, financial problems, and the amount of information [16]. Selfesteem is an intermediate variable between stressors and anxiety and depressive symptoms [12], as well as a psychopathological risk factor in other disorders [17]. If self-esteem is not assessed, the relationship between stressors and anxiety symptoms would be exaggerated. Therefore, self-esteem should be perceived as an independent variable [12]. Medical students need assertiveness in their daily interpersonal interactions with colleagues, patients, and their families. Additionally, students with low self-esteem and low assertiveness would show a negative and unpleasant professional attitude after graduation [18].

This study aims to assess self-esteem and assertiveness in medical students in Casablanca, Morocco, and the relationship between these two constructs and with anxiety and depression.

Methodology

Study type A cross-sectional study.

Target population

The targeted population hereunder are the students at the Faculty of Medicine in Casablanca, Morocco.

Conduct of the survey and data collection

An anonymous questionnaire from Google Forms was sent to students via Facebook social network messaging along with a message explaining the purpose of the study. The faculty provided the researchers with the names of those students.

Inclusion criteria

The study population involves students from grade one to grade six of the Faculty of Medicine of Casablanca, Morocco.

Exclusion criteria

Students from grade seven were excluded from the study population.

Students who do not have a Facebook account or have a username other than their first and last name were also excluded.

Measuring instruments

The researchers used an anonymous self-questionnaire that included:

- Sociodemographic data: age, gender, marital status, place of residence, and level of education.
- Rosenberg Scale is the most widely used scale to measure global self-esteem [19], which has been translated into French and validated [20]. It consists of ten items; six items are in positive form and four items in negative form. For each item, there are four types of response options: strongly disagree, disagree, agree, and strongly agree. These response options are scored from 1 to 4 (from 4 to 1 for negative items). Thus, scores vary between 10 and 40. A score lower than 25 indicates very low self-esteem, between 25 and 31 indicates low self-esteem, between 31 and 34 corresponds to self-esteem within the average, between 34 and 39 indicates a strong self-esteem, and a score higher than 39 indicates very strong self-esteem [20].
- Rathus Scale to evaluate assertiveness. It consists of 30 items; each item includes six different propositions ranging from "very characteristic of me" rated at +3 to "very uncharacteristic of me" rated at -3. For the so-called negative items, the scoring is reversed. The total score for all items varies between -90 and +90. A score lower than +10 indicates difficulties in assertiveness, and a score higher than +10 indicates assertive behavior. A high score may also indicate aggressive behavior. The scale does not distinguish between assertive and aggressive behavior [21].
- HADS Scale (Hospital Anxiety and Depression Scale) is used to assess depression and anxiety. It consists of 14 items, with odd items assessing anxiety and even items assessing depression. Each item has four response options (0, 1, 2, 3). A score less than or equal to 7 indicates the absence of anxiety or depressive symptomatology, while a score

greater than or equal to 11 indicates the presence of anxiety or depressive symptomatology, and a score between 7 and 11 is doubtful [22].

Statistical analysis

Data entry was done automatically by Google Forms. Descriptive analysis was performed using the Statistical Package for Social Sciences (SPSS) software in its twentieth version. Quantitative variables are represented by mean and standard deviation and qualitative variables by number and percentage. The study of the associations and correlations between the different variables was performed using Student's t test, chi², and analysis of variance (ANOVA). The results were considered significant if the p-value is less than 0.05.

Consent and ethics

The purpose of the study was explained to each student interviewed. Verbal consent was sufficient to begin the study.

Results

Sociodemographic characteristics

Of the total study population, 336 students responded to our questionnaire. Seventy percent were female (n= 235) and 30% were male (n=101). The majority of students were between 18 and 25 years old (95.2%; n=320), single (78.6%; n=264), and lived in an urban area (97.3%; n=327). Regarding educational level, percentages ranged from 15.2% (n=51) to 18.2% (n=61) for each grade (Table 1).

Self-esteem assessment

A percentage of 20.8% (n=70) of students had very low self-esteem, 32.7% (n=110) had low self-esteem, 24.7% (n=83) had self-esteem in the average, 18.7% (n=63) had high self-esteem, and 3% (n=10) had very high self-esteem. Overall, 54% (n=180) of students had low to very low self-esteem and 46% (n=156) had high or self-esteem in average. The mean score was 29.4 with a standard deviation of 6.2.

Assertiveness assessment

A percentage of 30% (n= 101) of students were assertive, and 70% (n=235) of students were not assertive. The median score was -7 with an interquartile range of [-24, 14].

Self-esteem and socio-demographic characteristics Self-esteem and gender

The mean score of self-esteem was higher for females than males and was at the border of statistical significance (p=0.049) (Table 2).

Table 1 Sociodemographic characteristics

Parameter	Number	Percentage (%)
Age		
Under 18 years old	5	1.5
Between 18 and 25 years old	320	95.2
Over 25 years old	11	3.3
Gender		
Female	235	70
Male	101	30
Marital status		
Single	264	78.7
Married	10	3
In a relationship	61	18.2
Divorced	1	0.3
Place of residence		
Urban area	327	97.3
Rural area	9	2.7
Level of study		
1st year	53	15.8
2nd year	59	17.6
3rd year	61	18.2
4th year	59	17.6
5th year	51	15.2
Grade 6	53	15.8

Table 2 Associations of self-esteem and socio-demographic characteristics, assertiveness, anxiety, and depression

		Self-esteem	Self-esteem	
	Number	Average	Standard deviation	
Gender				0.049
Woman	235	28.97	6.08	
Male	101	30.43	6.4	
Age ^a	R=0.115	$R^2 = 0.013$		0.036
Status				0.011
Single	264	29.02	6.15	
In couple	67	31.15	5.95	
Level of study				0.037
1st year	53	26.91		
2nd year	59	29.24		
3rd year	61	30.46		
4th year	59	30.08		
5th year	51	30.12		
Grade 6	53	29.45		
Assertiveness				<0.001
Assertive	101	34.05	4.19	
Not assertive	235	27.41	5.85	
Depression	R=0.523	$R^2 = 0.274$		< 0.001
Anxiety	R=0.407	$R^2 = 0.165$		< 0.001

^a Linear regression analysis

Self-esteem and age

Linear regression analysis showed a slight increase in self-esteem with age (R=0.115, R²=0.013). The result was significant (p=0.036) (Table 2).

Self-esteem and marital status

Single students had significantly lower self-esteem than students in a relationship or married (p=0.011) (Table 2).

Self-esteem and level of education

Mean self-esteem increased from year one to year two, peaked in year 3, and then declined (p=0.037) (Table 2).

Assertiveness and sociodemographic characteristics

No statistically significant difference was found between assertiveness and gender, age, and level of education. In contrast, students in a relationship or married were more assertive (p < 0.001) (Table 3).

Associations between self-esteem, assertiveness, anxiety, and depression

We found a significant association between self-esteem and assertiveness, self-esteem and anxiety, and self-esteem and depression (p<0.001) (Table 2). We also found a significant relation between assertiveness and anxiety, assertiveness, and depression (p<0.001) (Table 3).

Table 3 Association of assertiveness and socio-demographic characteristics, anxiety, and depression

	Assertiveness		Р
	Assertive	Not assertive	
Gender			0.345
Female	28.5% (n=67)	71.5% (<i>n</i> =168)	
Male	33.7% (n=34)	66.3% (n=67)	
Age	20.56 <u>+</u> 1.72	20.55 <u>+</u> 2.01	0.9
Status			< 0.001
Single	25.8% (n=68)	74.2% (n=196)	
In a relationship	47.8% (n=32)	52.2% (n=35)	
Level of study			0.39
1st year	11.9% (n=12)	17.4% (n=41)	
2nd year	16.8% (n=17)	17.9% (n=42)	
3rd year	24.8% (n=25)	15.3% (n=36)	
4th year	17.8% (n=18)	17.4% (n=41)	
5th year	14.9% (n=15)	15.3% (n=36)	
Grade 6	13.9% (n=14)	16.6% (n=39)	
Depression	4.9 <u>+</u> 2.6	7.2 <u>+</u> 3.3	<0.001
Anxiety	7.4 ± 3.5	9.2 ±3.7	< 0.001

Discussion

The study found that 54% of students had low to very low self-esteem. The mean score was 29.4 (SD=6.2). Similarly, a study conducted in Tunisia at the Faculty of Medicine in Sfax to assess self-esteem found results consistent with ours: 40% of students had low self-esteem and the mean score was 31.9 (SD=5.5) [23]. James, one of the first to speak about self-esteem, defined it as a relationship between the individual's aspirations and his effective successes in areas that he considers important. He explains the decrease in self-esteem by the comparison between the ideal self and the real self. Therefore, James derived the following formula: self-esteem is equal to success (achievement)/aspirations (goals), and specifies that one can improve self-esteem either by increasing the numerator (achievement) or decreasing the denominator (goals) [24]. Given the large amount of information and courses to learn, the medical student may feel overwhelmed. The numerator of the formula (achievement) would then decrease, which would decrease self-esteem. A backup hypothesis that can be made in light of James' formula is that medical students have high aspirations, which could affect self-esteem. Cooley defined self-esteem as the interpretation of the reactions and behaviors of those around us. He introduces the concept of "social mirror," which states that the judgment an individual makes of his or her own worth corresponds to the internalization of the judgment of others. Thus, the perception of others is more important in developing self-esteem than the objective value of the individual [25]. The medical student, in addition to the inherent stress of lectures and exams, has to deal with other problems, such as competitiveness, authority, rigidity, and limited opportunities to develop personal relationships with professors and peers [26]. Therefore, we speculate that the authoritarian attitude of some upperclassmen might convey an image of inferiority and worthlessness to predisposed students, so that the social mirror would reflect a pejorative image.

According to Twenge et al., there are two models to explain variations in self-esteem; the competence model which states that self-esteem is the result of the level of competence that individuals achieve in certain aspects of their life, and the "culture of self-worth" model which states that self-esteem increases with a culture's interest in self-love [27]. In Morocco, an Arab and Muslim country, the interest in self-love is low. Other virtues are revered that can be considered the opposite of self-love, such as self-sacrifice and altruism, which are included in the basic constitutions of Islam. The emphasis is on the "other" rather than the "self." The self or ego, which can be transliterated to the same Arabic word "Nafs," is portrayed as something to be purified or fought against, rather than something to be loved. This fragile relationship with the "self" is also evident in everyday language where the repeated use of "I" must be avoided or followed by an invocation. Therefore, Morocco may not be a country with a culture of self-worth, which could be a hypothesis that explains the low self-esteem found in our study.

Assertiveness has rarely been studied in medical students [28]. However, interaction with patients, families, colleagues, and superiors requires assertiveness. Assertiveness allows for better conflict management, respectful patient interaction, and the best possible care without giving in to unreasonable demands. It enables a good doctor-patient relationship and prevents being overwhelmed by the colleagues' demands to the point of professional exhaustion. In our study, 70% of students were not assertive. This could be explained by the high prevalence of low self-esteem found in our study. Yet, in a longitudinal study of nursing students, Ilhan et al. found that self-esteem increased while assertiveness decreased. This suggests that assertiveness is also influenced by factors other than self-esteem [28].

On the other hand, the role of cultural factor on assertiveness could explain our results. Indeed, a study in Tunisia, another Arab and Muslim country, found that only 36.8% of medical students were assertive [29].

We found an increase in self-esteem with age. However, there was no significant change in assertiveness. In the literature, self-esteem decreases in adolescence, increases in early and middle adulthood, continues to increase and peaks at age 60, and then decreases [30]. The target population is indeed in the age range where self-esteem is increasing.

Students in a relationship or married had better assertiveness and self-esteem than single students (p<0.05). Indeed, assertiveness enables one to reach out to others, and express one's desires and feelings, thus increasing the chances of a romantic relationship. As for self-esteem, it is obvious that a constructive romantic relationship positively influences self-esteem. On the other hand, self-acceptance is important to accept others.

We found a strong relationship between self-esteem and assertiveness, which is consistent with the literature [18, 29]. Ludwig and Lazarius found that the main cognitive biases of non-assertive people include self-criticism, perfectionism, and an inappropriate need for approval [31]. On the other hand, assertiveness training groups improve self-esteem [32]. Yet, assertiveness is more accessible in therapy, whereas self-esteem has received little attention from cognitive-behavioral therapists due to mixed results on the effectiveness of the intervention [33]. Nevertheless, Klubinski et al. recently demonstrated in a meta-analysis that cognitive-behavioral therapy based on Fennell's model can be effective in treating self-esteem [34].

In this study, a relationship was found between selfesteem and depression and between self-esteem and anxiety. The relationship between depression and selfesteem has been known for a long time. Low self-esteem is a symptom and diagnostic criterion for major depressive disorder and dysthymic disorder in the current DSM5 (The Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition) classification [35]. However, the nature of the relationship was controversial until Sowislo and Orth showed in a meta-analysis of longitudinal studies that the effect of self-esteem on depression is more significant than the effect of depression on self-esteem, whereas for anxiety the relationship is bidirectional [36].

We also found a relationship between assertiveness and depression. Other studies have found a similar result [29]. Moreover, assertiveness training programs improve depressive symptomatology [37].

Study limitations

The survey was a cross-sectional study. It was not able to determine the impact of medical studies on self-esteem and assertiveness. Assessment was done by an online questionnaire and only students who had a Facebook account participated in our study.

Conclusion

Self-esteem and assertiveness among Moroccan medical students were low in more than half of the students. They both had a significant association with depression and anxiety. It is figured out that students' supervisors need to be aware of this aspect. Self-esteem and assertiveness also need to be considered in the educational and psychological supervision of medical students. Additionally, students must be valued and their efforts recognized during their studies, and therapeutic strategies should be used when necessary. In the faculty of medicine of Casablanca, Morocco, a psychological support center has been established to accompany students and identify those at risk of psychological problems.

However, there is a need for more caution in interpreting the data collected in this work. These results cannot generally apply to all medical students. Further studies are needed to assess self-esteem and assertiveness in medical students worldwide, especially longitudinal studies, which would be of great interest to assess possible changes in self-esteem and assertiveness during medical school. Cross-cultural studies assessing self-esteem and assertiveness in medical students may be of interest, as well as studies in the general Moroccan population, to compare the results found in medical students with their peers from the same culture.

Abbreviations

ANOVA	Analysis of variance
DSM5	The Diagnostic and Statistical Manual of Mental Disorders, Fifth
	Edition
HADS	Hospital and Anxiety Depression Scale
SPSS	Statistical Package for Social Sciences

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Authors' contributions

HS analyzed and interpreted the data. NA contributed to the bibliographic research. The survey and writing of the article were done by YH who was a major contributor in writing the manuscript. The design of the study and the supervision were performed by MA. All authors read and approved the final manuscript.

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Availability of data and materials

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Declarations

Ethics approval and consent to participate

The purpose of the study was explained to each student interviewed. Verbal consent was sufficient to proceed with the study.

Consent for publication

Not applicable.

Competing interests

The authors declare that they have no competing interests.

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