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Factorial validity of the self-compassion scale among female University students: A comparative study between Saudi and Egyptian cultures

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Abstract

The study aims to verify the factorial structure of the self-compassion scale across different cultural contexts. The sample included 1039 students, divided into 521 students from Zagazig University (ZU) and 518 from Princess Nourah University (PNU) in the Kingdom of Saudi Arabia (KSA), which were chosen randomly. Exploratory factor analysis was used to test the stability of items on the dimensions. The results showed stability along with kindness with self, isolation, common humanity, and self-judgment factors. On the other hand, confirmatory factor analysis demonstrated that the results of this study yielded the best fit for the total sample. Then factor analysis across the two groups was used to verify the existence of differences between Saudi and Egyptian cultures. The analysis results revealed that the Egyptian environment model is superior to its Saudi counterpart and that there are no differences between the two cultures using the factorial differences indicators RMSEA, NNFI, GFI, and SRMR. This study's outcomes can have global implications for promoting self-compassion as a tool for improving mental health and well-being across cultures. *(Afr J Reprod Health 2023; 27 [6]: 88-100).*

Keywords: Self-compassion; Mental Health; COVID-19; Stress; Psychological impact; Academic satisfaction

Résumé

L'étude vise à vérifier la structure factorielle de l'échelle d'autocompassion dans différents contextes culturels. L'échantillon comprenait 1039 étudiants, répartis en 521 étudiants de l'Université de Zagazig (ZU) et 518 de l'Université Princess Nourah (PNU) au Royaume d'Arabie saoudite (KSA), qui ont été choisis au hasard. Une analyse factorielle exploratoire a été utilisée pour tester la stabilité des items sur les dimensions. Les résultats ont montré la stabilité ainsi que la gentillesse envers soi-même, l'isolement, l'humanité commune et les facteurs de jugement de soi. D'autre part, l'analyse factorielle confirmatoire a démontré que les résultats de cette étude ont donné le meilleur ajustement pour l'échantillon total. Ensuite, une analyse factorielle à travers les deux groupes a été utilisée pour vérifier l'existence de différences entre les cultures saoudienne et égyptienne. Les résultats de l'analyse ont révélé que le modèle environnemental égyptien est supérieur à son homologue saoudien et qu'il n'y a pas de différences entre les deux cultures en utilisant les indicateurs de différences factorielles RMSEA, NNFI, GFI et SRMR. Les résultats de cette étude peuvent avoir des implications mondiales pour la promotion de l'auto-compassion en tant qu'outil d'amélioration de la santé mentale et du bien-être dans toutes les cultures. *(Afr J Reprod Health 2023; 27 [6]: 88-100).*

Mots-clés: Auto-compassion ; Santé mentale; COVID 19; Stress; Impact psychologique ; Satisfaction académique

Introduction

In early December 2019, a coronavirus (COVID-19) disease of unknown origin was identified in Wuhan, China, which has spread worldwide. On January 30, 2020, the World Health Organization (WHO) stated that COVID-19 is an emergency that has caused international concern. Since the beginning of the infection, most governments have taken quick actions to slow down the virus's spread. A state of lockdown was imposed in many countries worldwide, and travel was restricted. People were socially isolated and had to stay at home, and many employees worked from home[1,2]. COVID-19 had adverse effects on the physical health of individuals infected with the disease and their subjective well-

being. Sudden changes in social lives, lockdowns, and shifts toward online education have harmed many people, especially university students[2,3].

The COVID-19 pandemic has had both positive and detrimental effects on self-compassion, according to studies. On the one hand, the pandemic has increased tension and anxiety, making it more challenging for individuals to practice self-compassion[2]. On the other hand, the pandemic has highlighted the significance of self-care and self-compassion in stress management and mental health maintenance. As a means of coping with the challenges of the pandemic, many individuals have turned to mindfulness and meditation practices, which can help cultivate self-compassion[1,4].

Furthermore, the pandemic has highlighted issues such as social inequality and systemic injustice, which can inspire individuals to demonstrate compassion for themselves and others. During the COVID-19 outbreak, most students reported increased anxiety, stress, and depression symptoms[1,5,6]. Moreover, the students experienced loneliness and boredom[4,7]. It is observed that the students' complaints, such as depression, anxiety, stress, and loneliness, increased during the pandemic, and these complaints affected their well-being[6,8]. These observations indicate that the risk perception of COVID-19 varies among individuals, societies, and cultures. Risk perception has strong implications for the spreading pandemic since it can influence an individual's practice of the recommended behaviors.

The COVID-19 pandemic is perceived as a global crisis that has posed physical health and mental health concerns for those who either contract the disease directly or indirectly. Pfefferbaum and North claimed that COVID-19 has resulted in "widespread emotional distress and increased risk for psychiatric illness[9]." "Self-compassion involves being kind to oneself when confronting personal inadequacies or situational difficulties, framing the imperfection of life in terms of common humanity, and being mindful of negative emotions so that one neither suppresses nor ruminates on them[10]". Self-compassion tends to foster positive reappraisal and proactive coping and reduce avoidant behaviors. However, evidence regarding self-compassion salutary's on effects problem-solving, support-seeking, and distraction was mixed[1,11,12]. Self-compassion has been shown to have numerous positive effects on mental health and well-being, including decreased levels of anxiety and depression, increased resilience in the face of stress, and greater life satisfaction overall[13]. However, studies have also revealed that there may be gender distinctions in self-compassion practices. For example, women are more likely to report higher levels of self-compassion than men. This may be partially attributable to societal expectations regarding gender roles and emotional expression; women are often socialized to be more nurturing and empathetic toward others, which may correlate to greater self-compassion. In addition, research indicates that males may be more inclined to view self-compassion as an indication of weakness or vulnerability. This can make it more difficult for them to engage in self-compassionate behaviors or attitudes, even when doing so would be beneficial[4,6].

Men and women can benefit from self-compassion, but it is essential to recognize that gender norms and expectations may influence how individuals approach this practice. Individuals can cultivate greater emotional resilience and well-being by recognizing these differences and working to surmount any potential barriers to self-compassion based on gender identity or socialization[8,14].

Self-compassion can help men and women, but gender norms and expectations may affect how people practice it. Individuals can build emotional resilience and well-being by understanding these distinctions and overcoming gender identity or socialization-based self-compassion barriers. Self-compassion helps deactivate the threat system, which is associated with feelings of insecurity, defensiveness, and the limbic system[15,16]. Instead, it supports the self-soothing system that is connected to feelings of secure attachment, safeness, and the oxytocin-opiate system[15]. Hence, self-compassion contributes positively to psychological well-being, as it supports people's sense of safety and security and reduces negative feelings, including stress, anxiety, and depression. Therefore, based on previous evidence, we hypothesize that self-compassion positively affects life satisfaction in female students during the corona period.

Research problem

During COVID-19, the education system moved to online platforms in many parts of the world; therefore, students, teachers, and families had to adjust to this change rapidly. University students were among the most affected groups by this drastic arrangement[2,17]. The impact of COVID-19 pandemic stress on individuals' mental health has been well documented, with extensive research revealing that COVID-19 stress is related to people's psychological well-being. For example, El-Zoghby *et al*., and Lopez *et al*., found that the elderly were vulnerable to COVID-19 stress, which significantly affected psychological wellness, encompassing personal growth and purpose in life. Their study assessed the strong correlation between age and psychological well-being in the harsh context of the global public health crisis created by COVID-19[18,19].

COVID-19 had a negative psychological impact on Chinese mental health, including anxiety, depression, and stress on Chinese mental health[1]. Park and Park have shown that in Korea, the demand for mental healthcare during the virus outbreak has increased[20]. González-Sanguino et al., showed that the sense of belonging and self-compassion are protective components of psychological well-being to these vulnerable people and help reduce the negative effect of COVID-19 pandemic stress on mental health[13].

A recent study in China investigated the effect of COVID-19 on public psychological status and concluded that females were three times at a higher risk of developing anxiety[21,22]. Also, Psychological studies of the coronavirus have shown women report more psychological consequences than men, such as anxiety and posttraumatic stress disorder[13]. Therefore, mental health professionals must pay attention to these differences and psychological challenges[23]. Mental health issues are prevalent in both Saudi Arabia and Egypt, with depression and anxiety being common disorders. Self-compassion has been shown to be effective in reducing symptoms of depression and anxiety, making it an important area of study for mental health professionals.

We will examine the effect of the COVID-19 pandemic stress on individuals' self-compassion. Moreover, to prove the hypothesis of the mediating role of the pandemic stress of COVID-19 in self-compassion, we must first understand the mechanism by which self-compassion has affected COVID-19 stress. To aid in preserving the community's mental health as the pandemic spreads, particularly in Egypt and other countries, and given the uncertainty surrounding it, we must also investigate the impact of COVID-19 on the mental health and social support of Egyptian adults during the period of the pandemic.

Research aim and research questions

Research aims

1. Identifying the factorial structure of the Self-Compassion Scale (SCS) in an Arab sample
2. Examining the factor invariances between Egyptian and Saudi samples and how well their factor structures fit

Research questions

1. To what extent does the factorial model conform to the measure of self-compassion in the Arab environment?

Are there differences in the construction of the self-compassion measure in both Saudi and Egyptian societies?

Methods

General background

COVID-19 risky behavior and optimistic bias

COVID-19 spreads because people fail to follow preventive measures. Noncompliance with COVID-19-related precautionary behavior falls under "risky behavior," which is socially unacceptable volitional conduct, prompting direct/circuitous undesired outcomes. Optimistic bias, Weinstein is the perception that one's own risk is lower than that of comparable others, leading to the experience of more positive outcomes than similar others[24]. Weinstein reported that college students tend to exhibit "unrealistic optimism" regarding perceptions of risk; i.e., their chances of facing health and safety concerns are seen as less likely than those of their peers[24]. It was observed that highly optimistic people indulge in risky

behavior. For example, utilizing a national sample, we discover that depression and anxiety are prevalent mental issues during the COVID-19 pandemic[25].

These mental problems impact the psychological well-being of individuals from different communities, including university students, healthcare professionals, and the general population. Females, university students, divorced individuals, healthcare professionals at the front line, and those suffering from chronic conditions are at a higher risk[18,22,26].

How do students get information on COVID-19?

Many people try to get information about this new disease from specific sources, such as TV news, official websites of institutions, or social media. Although studies indicate that information on COVID-19 is mainly obtained from online platforms[1], students rely on information mostly from public health institutions[27]. The level of knowledge about the virus and the disease may well be related to the level of anxiety about the future and the satisfaction with academic status, which may impact subjective well-being during the COVID-19 pandemic[2]

Self-Compassion:

Self-compassion is defined as an ability to understand profoundly and mindfully the self when "suffering occurs through no fault of one's own" and "when the external circumstances of life are simply hard to bear[11]". Self-compassion induces favorable emotional regulation (e.g., emotion clarity, impulse control, acceptance of emotional response), which in turn engenders mental health benefits.

Neff proposed that self-compassion entails (i) extending kindness and understanding to oneself rather than treating oneself with harshness and criticism (self-kindness vs. self-judgment), (ii) seeing one's suffering as a part of the shared human experience rather than an isolated experience (common humanity vs. isolation), and (iii) a balanced perspective of one's suffering rather than being overly attached to it (mindfulness vs. overidentification)[12]. Accordingly, meta-analyses have reported robust negative associations of self-compassion with psychopathology and positive associations with well-being.

Mental health issues are prevalent in both Saudi Arabia and Egypt, with depression and anxiety being common disorders. Self-compassion has been shown to be effective in reducing symptoms of depression and anxiety, making it an important area of study for mental health professionals.

Components of self-compassion

There are three fundamental components of self-compassion: self-kindness, feelings of common humanity, and mindfulness. First, self-kindness implies the tendency to be caring and understanding about being severely self-judgmental[1,10]. The second is the sense of common humanity that engages individuals in realizing that everyone fails and constantly makes mistakes, which is normally inevitable. It indicates a sense of self-acceptance, that we are imperfect, and that being or feeling inadequate should be tolerated[15]. Third, mindfulness illustrates an awareness of every present moment in a contemplative manner. Thus, with mindfulness, we will be able to ruminate critically on undesired aspects of ourselves and our lives[15].

Self-compassion scale

Kristin Neff's SCS measures self-compassion. Self-compassion is the ability to treat oneself with care, understanding, and acceptance when suffering. 26 Likert-scaled items make up the SCS, ranging from 1 (nearly never) to 5 (almost usually). The SCS assesses self-kindness, self-judgment, common humanity, isolation, awareness, and overidentification. Being kind and forgiving to oneself is self-kindness. Self-judgment is being unduly critical of oneself. Recognizing that sorrow and imperfection are universal is part of common humanity. Isolation is feeling alone or separated during challenging circumstances. Mindfulness is awareness of thoughts and feelings without judgment or avoidance. Overidentification means being too attached to one's emotions.

Research and therapeutic contexts have employed the SCS to measure self-compassion, and it is reliable and valid among college students, cancer patients, and depressed and anxious people. Clinicians can use the SCS to measure clients' self-compassion and help individuals reflect and grow[4, 28].

COVID-19 effects on students

Several studies have reported a considerable rise in adult mental disorders during the COVID-19 lockdown; children's psychological well-being has also been found to be seriously affected[13,29]. One of the groups that have been dramatically affected by the COVID-19 outbreak is university students[30]. In many countries, students were suddenly asked to leave their college campuses and dormitories and expected to engage in distance learning immediately[31,32]. They have experienced isolation from their peers and faculty members and changes in their living arrangements, financial resources, and study schedules[33]. Moreover, the pandemic carries uncertainty and unpredictability in the short and long term. It cannot be denied that all these difficulties will have psychological, socioeconomic, and social effects[34]. Along with pandemic-related health stresses, such as health anxiety and uncertainty about the disease, most students also have to adjust to new daily and academic arrangements[25,35]. Also, it may affect individuals' mental state, causing them to dwell obsessively on the fearful possibilities of infection, making them irritable, and causing loss of sleep or insomnia.

Psychological effects of self-compassion

Self-compassion helps improve individuals' sense of gratitude, and self-compassion interventions increase positive psychological characteristics, including gratitude[36,37]. Multiple empirical studies postulated that self-compassion is linked with positive coping[1]. Previous studies demonstrated that self-compassion negatively correlates with stress and anxiety. Numerous studies show that self-compassion improves psychological health in a variety of ways, including promoting life satisfaction, emotional intelligence, social connectedness, learning objectives, wisdom, happiness, and optimism and reducing depression, anxiety, xenophobia, and perfectionism levels[38].

Chishima *et al*. and Harmanci and Akdeniz found that self-compassion exhibited a positive protective role in individuals when they faced stressful situations. The "common humanity" factor that helps people with high self-compassion was less likely to be negatively affected by stressful events because they realized that this was a common human problem instead of isolating themselves[39,40]. Students with high self-compassion might take positive coping strategies to relieve stress when faced with failure. Similarly, empirical studies suggested that individuals with high self-compassion promote recovery from traumatic events by accepting reality[1,25].

Psychometric structure of self-compassion

The SCS has had some psychometric problems due to several psychological justifications, including the following:

a) *Perceptions of Emotions and Interactions with Others.* This is linked to the emotional turns a person takes during interpersonal interaction. There are nonemotional (behavioral) strategies in which the individual responds to pain, failure, and stress (kindness and judgment) in exchange for understanding their feelings as being general to others and thus accepting the effects of environmental stressors and looking for solutions[12,41].
b) The scale is used to determine the emotional state and feelings of acceptance in people with borderline personality disorder, anxiety disorder, and eating disorders[40,42.]
c) Some studies as "Neff" found a prevalent factor that explains the phenomenon that depends on the dominance of a person's mood, either self-compassion or self-criticism[10]. This study used a bifactor model, and "Neff" concluded that the general factor model is a good explanation of the phenomenon by 90%[10].

Raes *et al*., used confirmatory factor analysis to verify the validity of the short version of the scale on Dutch participants. The construction suffered from a violation of the normality condition; then, the unweighted least squares method was used[43]. The results reached a best-fitted model. Alpha persistence treatment alpha ranged between 0.55 and 0.87. In the Iranian environment, Azizi et al., verified the confirmatory construction of the six-factor model on the students at Tehran University. The model reached acceptable goodness of fit indicators, except for the NNFI and GFI index, which may be due to a defect in the multivariate normality of the data analysis. The internal consistency was calculated by the alpha coefficient of dimensions, which ranged from 0.78 to 0.93[44].

Cunha *et al*., verified the validity of the six-factor model by confirmatory factor analysis (CFA) on Portuguese school students, and the model's validity was proven[45]. The results showed the reliability of the construct across gender, and the convergent validity was tested with measures of emotional memories, anxiety, depression, and stress. The poor fit of the second-order general factor model was also proven. The scale's alpha coefficient was 0.88, and Cronbach's alpha coefficients ranged from 0.70 to 0.79.

Despite these results, the CFA of the six-factor construction of undergraduate students failed in previous studies[12,42]. The results of Costa et al., focus on a general factor of the general second-order factor because of the saturation of items from both dimensions on others according to the modification indices. In the Italian environment, Veneziani, Fuochi & Voci proved the best fit of the six-factor model, and the alpha coefficient of the scale was 0.90, and the alpha coefficients for subscales ranged from 0.69 to 0.78[47].

Neff *et al*., suggest the six-factor model that saturates two factors in the second-order as a treatment for the bifactor model in which an item is loaded on each dimension. A good fit is reached according to the confirmatory factor model, and the reliability with the omega coefficient for calculating the stability was 0.92. The omega coefficients for the dimensions ranged from 0.85 to 0.90[41].

Sample/Participants/Group

KSA and Egypt are both countries with predominantly Muslim populations, where self-compassion may not be a widely discussed or practiced concept. Therefore, studying self-compassion in these cultures can provide insights into how it is perceived and practiced in different cultural contexts. The sample size for the study was 1039 students. The participants were chosen voluntarily after being briefed on the study's objectives, and their inclusion in the sample did not affect their grades in the courses they were taking. The students could leave free to withdraw from the study if they felt embarrassed to respond to some items on the scale. The study sample was divided based on culture into 521 (50.1%) female students from ZU in Egypt and 518 (49.9%) at PNARU in KSA. The sample is described in light of the demographic variables, as shown in Table 1.

Table 1: Demographic variables of the sample

Variable	Levels	Frequency	%
Age	18 to 23 years	975	93.8
	24 to less than 30 years	51	4.9
	30 years or more	13	1,3
College major	Humanities	780	75.1
	Scientific faculties	209	20.1
	Health faculties	50	4.8
Academic level	First grade	112	10.8
	Second grade	321	31
	Third grade	307	29.6
	Fourth grade	266	25.7
	Fifth grade	30	2.9

Design

The study relied on an analytical approach and the design of cross-sectional studies to test the self-compassion structure and the stability of its factors across the Egyptian and Saudi environments. The responses of the study sample were analyzed using quantitative methods.

Instrument and procedures

We used accepted guidelines for a translation-back-translation process. The indicators of the full version (long form) of the 26-item SCS were translated into Arabic[48]. It was back-translated into English by a bilingual consultant, and then both translators recommended necessary modifications, restatement, and rewording. Then the questionnaire was validated by three expert opinions who suggested no significant improvements. A pilot study was carried out on 31 participants before the study to assess the feasibility and reliability of the questionnaire, with an acceptable Cronbach's α of 0.74. Informed consent was obtained from study participants.

Data analysis

Scale formulas in the electronic image were calculated using the Google Forms platform through the following link: https://forms.gle/Y6nj1CubjHM244xu7.
Responses expressing suffering and lack of empathy were recorded so that a higher score acted

less stress for this response (the link to the questionnaire was sent through emails, WhatsApp groups, Facebook groups, and other social media). The correlation matrix and exploratory factor analysis (EFA) were estimated using the SPSS v21 program, and the multivariate analysis was performed using the LISREL version 8.51 program. The CFA of the total sample was used to identify the cohesion and accuracy of construction during the two cultures.

Results

Factor stability of the self-compassion scale items

EFA, the principal component analysis (PCA), and orthogonal rotation using the varimax method were employed in this study. The number of dimension extraction is determined by six dimensions. A factor loading cutoff score equals .35 for accepted items. The Kaiser–Meyer–Olkin value existed at 0.92, which is a high value that indicates the suitability of the exploratory sample for the EFA. The number of factors before the rotation was four, and the first factor was a polarizer of the items. The eigenvalues and the explained variance proportions of the factors with and without rotation are listed in Table 2.Factor analysis before rotation yielded four factors that explained 50.9% of the total variance of the correlation matrix. The first factor was polarized for overall items without rotation analysis, meaning the items were distributed over a general factor model. The results were defiant to previous studies without rotation on four factors, and this is because the phenomenon was distributed in three bipolar dimensions, which made the items shrink into the four factors.

Table 2: Eigenvalues and the explained variance of self-compassion with and without rotation

Factor Extracted	Without rotation		Varimax rotation	
	Eigenvalue	Explained variance	Eigenvalue	Explained variance
Self-kindness	7.53	28.98%	3.80	14.60%
Common humanity	3.09	11.90%	3.22	12.38%
Mindfulness	1.41	5.41%	2.74	10.56%
Self-judgment	1.20	4.62%	2.37	9.12%
Isolation	.98	3.79%	1.66	6.39%
Overidentification	.97	3.73%	1.39	5.36%

Table 3: The items of factor loadings after rotation

No.	First factor	Second factor	Third factor	Fourth factor	Fifth factor	Sixth factor
1		.72				
2		.70				
3	.35			.62		
4		.57	.38			
5	.37				-.45	
6		.59	.39			
7				.77		
8		.45			.56	
9	.40					-.68
10				.79		
11		.55				
12	.52				-.46	
13			.82			
14	.64					
15				.60		
16		.62				
17	.64					
18			.82			
19	.66					
20						.75
21					.63	
22	.66					
23	.71					
24			.49			
25		.43	.51			
26	.74					

Table 4: The factor loading of the six factors on second-order two-factor mode

	Subscale factors	Factor loadings	Std. error	t-value
Components	Self-kindness	.96	.035	37.73
	Common humanity	.65	.026	25.02
	Mindfulness	.97	.026	37.28
	Self-judgment	.98	.026	37.85
	Isolation	.92	.025	37.03
	Overidentification	.97	.026	37.48

Table 5: The factor loadings of the 26 items on the six factors

Subscales	No.	Factor loadings	Std. error	t-value
Self-kindness	5	.40	.084	10.06
	12	.66	.12	5.51
	19	.70	.12	5.61
	23	.66	.12	5.52
	26	.73	.13	5.54
Common humanity	3	.78	.10	3.99
	7	.70	.062	11.35
	10	.64	.059	10.88
	15	.41	.047	8.75
Mindfulness	9	.46	.085	9.27
	14	.71	.095	7.54
	17	.67	.096	6.98
	22	.77	.10	7.44
Self-judgment	1	.48	.085	9.02
	8	.60	.077	7.80
	11	.66	.084	7.90
	16	.65	.083	7.81
	21	.64	.086	7.40
Isolation	4	.70	.098	5.76
	13	.64	.049	13.04
	18	.59	.048	12.49
	25	.77	.054	14.20
Overidentification	2	.51	.086	8.95
	6	.71	.087	8.19
	20	.44	.066	6.71
	24	.61	.079	7.72

Table 6: Multigroup confirmatory factor analysis results for two samples

Sample	RMSEA	NNFI	GFI	SRMR
ZU	.063	.97	.97	.057
PNU	.075	.97	.97	.061
Differences	.065	.96	.96	.071

The factorial analysis after varimax orthogonal rotation resulted in six factors that explained 58.4% of the total variance of the phenomenon. The dimension eigenvalues ranged between 3.80 and 1.39, meaning that the items were extracted into six factors. The items of factor loadings after rotation are shown in Table 3. The results revealed that the factors of self-compassion, common humanity, self-judgment, and isolation were stable, and their items were distributed over them as assumed in the original construction of the theory. Moreover, the mindfulness and over identification factors were globally unstable.

The factorial validity of the self-compassion scale for the participants

CFA technique by using the unweighted least squares (ULS) method was performed. The results revealed the negative determinant of the correlation matrix because of violating the multivariate normality conditional. The goodness-of-fit indicators were as follows: RMSEA = .043, X2 = 454.5, P = .000, NNFI = 1, GFI = .98, SRMR = .051, AGFI = .97; and factor loading of the six factors on the second-order Bifactor Model are shown in Table 4. The factor loading of the six subscales was statistically significant on the second-order two-factor model. Table 5 displays the factor loadings of the 26 items on the six factors. It is clear from the results that the hypothetical model of self-compassion in its sub-dimensions approximates the sample data in the Egyptian and Saudi societies together. The results showed an acceptable model according to fit indices, but the chi-square index was poor in terms of goodness of fit due to the large sample size.

This is in line with a study by Harmanci & Akdeniz[40], who indicates that highly self-compassionate people adopt a compassionate mindset, allowing them to cope with challenges and stressors by treating themselves with care and kindness. They learned that their situations were part of the greater human experience; therefore, they did not allow themselves to be carried away by strong and negative emotions (Allen *et al*.).

Factorial structure differences across cultures

The study used a multi-group confirmatory factor analysis (MG-CFA) for the two-sample cultures: PNARU and ZU. Matching model structures in each culture and differences between the two cultures' universities were estimated, as shown in Table 6. The results showed that the model describing self-compassion among ZU students had

fitted indices and confirmed the goodness of fit at the ideal levels among the PNU's participants. The Egyptian background outperformed the Saudi environment in its fitting because the hardness on oneself may be high in the Saudi participants, indicating a violation of the multivariate normality data condition of the Saudi environment. Violation of the normality condition from the educational perspective shows the sample's tendency toward negative details of emotion (cruelty to oneself). Also, the goodness of fit of factorial differences in the two cultures was confirmed, meaning that there are no differences across the two cultures and the model construction is suitable for application across the two cultures without change.

These findings agree with those of other studies, suggesting that women are more vulnerable to depression for several reasons, including differences in personality characteristics[49], and sociocultural roles[50]. Accordingly, such a difference in our results could be attributed to the caregiving role in families where women may be more involved in providing physical and emotional support to the elderly or children[51]. The outcomes here are consistent with the results of Skoda[52], who tried to identify self-compassion and its relationship to depression and tolerance. That is, when individuals go through difficult times, they provide themselves with care and tenderness, optimism, hope, and kindness, thus leading to an enhancement of self-compassion.

Discussion

Limitations

Some limitations should be addressed in future research. First, because this study was designed according to a cross-sectional research model, even though the relationship between the investigated variables can be explained, the causal relationship cannot be strongly confirmed. Future studies may consider conducting a longitudinal or empirical research model to shed light on this relationship. Second, we adopted the participant's self-report by the online survey method, so it is likely that the common method bias has a certain effect on the results we obtained.

Third, it did not test the differences between genders due to the differences in the sample, and the resulting decision may lead the researcher to a mistake of the first type. The differences between age levels vary in number. The majority of the population is between the ages of 18 and 23, with emotional, intellectual, and behavioral characteristics distinct from those of the other age groups. The number of students in humanities faculties is three times higher than that in scientific and medical colleges' students, which makes it impossible to test the stability of measurement for builders across age groups, genders, and specializations.

Fourth, most of the participants in the current study were women from only two universities, and a group from other universities can help generalize the results. Finally, there is limited research on self-compassion in the Middle East, particularly in Saudi Arabia and Egypt. Thus, conducting research in these countries can help fill the gap in knowledge about self-compassion practices and attitudes.

The current study aims to develop the SCS in the Arab environment for female university students. Two different cultures were chosen: PNU was chosen to represent Saudi culture and ZU to represent Egyptian culture. According to self-compassion is a construct that experiences the reinforcement of an emotional state through awareness and acceptance of complicated feelings[12]. The present study differed in nature from that of Costa *et al*[46], where the six-factor model was tested on two second-order factors, such as bipolar trait, a six-factor phenomenon. This expresses a different view of the study of self-compassion as a bipolar construct that saturates on three factors.

The results differed from the model parameter estimates in the Neff model where the model was identical to the sample data at the undergraduate level. However, despite the limitations of the study, the value of the X2 index was significant, and perhaps this is due to the violation of the multivariate normality condition[12]. It is clear from the results that the scale, despite its translation from a foreign culture and its application to the Arab environment, proved its credibility in the Arab environment with some limitations in the analysis, and this contradicts the results of Hellfrich's[53], which indicated that etic and this term refer to a foreign scale preconstructed and translated into the mother tongue, and has been applied in different cultures as in studies[54]. In contrast, the emic studies referred to the construction of the scale items considering the

prevalent culture in the community, and the results of these studies wereexamined[12,41]. The reliability coefficient of the scale items in the current study was 0.70, which is an acceptable value. The alpha coefficient for self-kindness was 0.77, common humanity 0.73, mindfulness 0.75, self-judgment 0.74, isolation 0.78, and overidentification 0.66.

Harmanci & Akdeniz and Xue *et al*.[8,48] agreed with the current study in high stability of isolation dimension, which means that the sample is different in expressing self-compassion and other factors work on the individual's lack of self-acceptance due to the controlled emotion, self-esteem, and level of depression. Moreover, the high value of the isolation dimension reflects heterogeneity among the sample members in expressing their opinions and accepting external influences.

The values of the alpha coefficient were low in previous studies[55,56], which is due to the translation of the current study scale from a foreign culture and its application to the Egyptian and the Saudi culture. This differs from another study that found emotional traits more stable across cultures[57]. Furthermore, the low value of the alpha coefficient identification dimension indicates the low scores of the sample on this dimension, as confirmed by Cunha *et al*[55].

The results of global stability agreed with the results of Birkett[58] in three things: self-kindness, common humanity, and isolation. While the studies by Birkett and Xue *et al*.[8,58] concluded that self-judgment is one of the stable factors, another study revealed that excessive specificity was one of the stable factors, which justifies a person's cruelty to oneself in Arab universities, resulting in blame and low perception of university student's physical or social self-image.

Conclusion and Implications

Our findings highlight the role of self-compassion in buffering the adverse consequences of perceived threats on well-being and facilitating a general tendency to find benefits regardless of threats. Our results can guide future researchers, mental health professionals, universities, and policymakers to understand and improve self-compassion among university students. The COVID-19 pandemic has had a substantial impact on university students' life. During the pandemic, "online instruction" has become a part of the lives of students who were not familiar with distance learning. Therefore, their daily routines affected their self-compassionate and subjective well-being. Moreover, it was observed that social contact with family and friends may have a positive effect on self-compassion.

Based on the findings, we recommend that policymakers pay more attention to individual's mental health issues during the COVID-19 pandemic. Second, to reduce stress and fears in the age of the COVID-19 pandemic, we can practice self-compassion. Third, psychologists and counselors can incorporate these concepts and practices into discussions and training courses (such as MFY by Bluth and Blanton) to improve students' psychological self-compassionate and well-being in the context of the ongoing COVID-19 pandemic. Fourth, the universities can establish new social support channels to positively contribute to students' self-compassion levels.

It is crucial to understand that building a foundation of self-compassion does increase people's psychological well-being, as it supports people to cope with COVID-19 stress and other stresses.

It can also raise awareness of the necessar y precautions and procedures in the event of a susp ected infection, which can reduce stress. For future research, we believe it is essential to consider the effects of demographic factors such as financial resources, living arrangements, and gender differences on self-compassion during the COVID-19 pandemic. Also, further research can compare the cultural differences in psychological characteristics (e.g., life satisfaction and self-compassion) and their associations during the COVID-19 pandemic. Furthermore, the mediating effect of positive coping and the moderating role of gender in the relationship between self-compassion and life satisfaction should be examined.

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Conflict of interest

The authors declare that they have no conflict of interest.

Ethical approval

All procedures performed in the study were following the ethical standards of the institutional research committee of Faculty of Arts Nourah Bint Abdulrahman University (IRB Log Number: 20-0473) and with the 1964 Helsinki declaration and its later amendments.

Data availability

The raw data supporting the conclusion of this article will be available upon request to the corresponding author.

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