

# Self-esteem, general and sexual self-concepts in blind people

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**Background:** People with visual disability have lower self-esteem and social skills than sighted people. This study was designed to describe self-esteem and general and sexual self-concepts in blind people. **Materials and Methods:** This was a cross-sectional study, conducted in the Isfahan University of Medical Sciences in 2013-2014. In this study, 138 visually impaired people participated from Isfahan Province Welfare Organization and were interviewed for measuring of self-esteem and self-concept using Eysenck self-esteem and Rogers' self-concept questionnaires. The correlation between above two variables was measured using Statistical Package for the Social Sciences (SPSS) software by Pearson correlation test. **Results:** Mean [ $\pm$  standard deviation (SD)] age of patients was  $30.9 \pm 8$  years. The mean ( $\pm$ SD) of general self-concept score was  $11 \pm 5.83$ . The mean ( $\pm$ SD) of self-esteem score was  $16.62 \pm 2.85$ . Pearson correlation results showed a significant positive correlation between self-esteem and general self-concept ( $r = 0.19$ ,  $P = 0.025$ ). The mean of sexual self-concept scores in five subscales (sexual anxiety, sexual self-efficacy, sexual self-esteem, sexual fear, and sexual depression) were correspondingly  $11 \pm 4.41$ ,  $19.53 \pm 4.53$ ,  $12.96 \pm 4.19$ ,  $13.48 \pm 1.76$ , and  $5.38 \pm 2.36$ . Self-esteem and self-concept had significant positive correlation with sexual anxiety ( $r = 0.49$ ;  $P < 0.001$ ) ( $r = -.23$ ;  $P < 0.001$ ) and sexual fear ( $r = 0.25$ ;  $P = 0.003$ ) ( $r = 0.18$ ;  $P = 0.02$ ) and negative correlation with sexual self-efficacy ( $r = -0.26$ ;  $P = 0.002$ ) ( $r = -0.28$ ;  $P = 0.001$ ) and sexual-esteem ( $r = -0.34$ ;  $P < 0.001$ ) ( $r = -0.34$ ;  $P < 0.001$ ). **Conclusion:** Self-esteem and self-concept had significant correlation with sexual anxiety and sexual fear; and negative correlation with sexual self-efficacy and sexual-esteem.

**Key words:** Self-concept, self-esteem, sexual self-concept, visual impairment

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## INTRODUCTION

The World Health Organization (WHO) defines disability as a set of physical or mental disorders preventing people from living a social and individual life independently.<sup>[1]</sup> Disability and its interventions are very complex and in terms of sociocultural issues, they are very diverse. There is much evidence that people with disabilities have a lower level of health.<sup>[1]</sup> According to the Comprehensive Law on Protection of the Rights of Persons with Disabilities, disability covers six groups of visual, mental, physical-motor, hearing, speech, and psychological disorders.<sup>[1]</sup> Visual disability has been considered as one of the most

important types of disability in the world. The WHO defines blindness as vision in an individual's best eye of less than 20.400.<sup>[2]</sup>

People with visual disability feel alone and usually have trouble in making new friends. Compared to their sighted peers, people with visual disability have lower self-esteem, social skills, and academic achievement resulting in a need for being supported in psychosocial aspects.<sup>[3]</sup>

Self-concept has been defined as a dynamic and organized system of beliefs, attitudes, and views that each person offers to achieve a true pattern of his/her identity.<sup>[4]</sup> Studies have indicated that self-concept is the basis of all motivated behaviors. Self-concept embraces

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different “selves” in one’s personality and identifies them. Potential “selves,” on the other hand, provide the required motivation for one’s actions. Thus, self-concept is related to self-esteem and people with high self-esteem usually have a distinctive self-concept as well.<sup>[5,6]</sup> Self-esteem, as one of the most important aspects of personality and determinants of human behavioral characteristics and development, includes a set of attitudes and beliefs expressed by people in their relationships with the outside world. Self-esteem indicates the extent to which an individual perceives him/herself as able, valuable, and important. Self-esteem is a personal experience expressed in one’s speech and behaviors.<sup>[7]</sup> Low self-esteem leads to physical and mental disorders such as anxiety, depression, behavioral and communication problems, and deviant behaviors. In a study, Allison found that people with low self-esteem show symptoms such as physical complaints and feeling of loneliness, indifference, depression, and hopelessness. Such consequences undoubtedly increase one’s vulnerability and lead to impaired social and interpersonal relationships.<sup>[7]</sup>

Among the important needs of life, sexuality is one such need that affects one’s satisfaction of life. Many complex aspects of sexuality have been discussed so far,<sup>[4]</sup> and researchers have found that it is not enough to analyze sexuality as simply a behavior but it must be regarded as a part of a broader context of human behaviors.<sup>[8]</sup> One of the issues considered during the past few decades is the concept of ‘sexual selfhood’ or sexual self-concept.<sup>[9]</sup>

As indicated in many studies, sexual self-concept has a multidimensional nature that makes people able to evaluate themselves in different sexual dimensions.<sup>[10-13]</sup> An interesting point in the study done by Ziaei *et al.* (2013) is that they have divided different dimensions of sexual self-concept into positive and negative areas. In the negative area, items reveal negative emotions such as sexual anxiety, fear, and depression and the positive area measures positive emotions such as motivation; passions; and behaviors such as sexual optimism, sexual problem management, and sexual self-esteem and self-efficacy.<sup>[14]</sup>

Therefore, general self-concept like self-esteem and self-efficacy can affect general health and sexual self-concept. However, the interaction between general self-concept and sexual self-concept has not been fully examined in previous studies. Accordingly, in line with the WHO objectives regarding enhancing the quality of the disabled people’s life and to shift the existing paradigm regarding sexual disorders to sexual health, the present study was conducted to describe self-esteem and general and sexual self-concepts in blind people in 2014 on the blind people who were supported by Isfahan Province Welfare Organization as basic data for making intervention in the future research.

## MATERIALS AND METHODS

This was a cross-sectional study, conducted in the Isfahan University of Medical Sciences in 2013-2014. (*registered number: 393622*).

The target populations were people with visual impairment who were supported by Isfahan Province Welfare Organization. The inclusion criteria included age above 18 years, not having a severe mental disability or anxiety, mood, personality, and psychotic disorders that make the participants unable to answer the questions properly. In case of not being able to answer questions or withdrawal, the person was excluded from the study. It must be noted that in the present study the severity of visual impairment had not been considered and all participants were completely blind.

After the acceptance of the proposal and permission from the Medical Ethics Committee, people who were eligible for the study were selected. Considering the small number of blind people supported by Isfahan Province Welfare Organization, all blind people (500) who matched the inclusion criteria were invited to participate in the study. However, out of the 500 blind people, 301 refused to participate and 61 did not answer the questionnaires completely and were excluded from the study. Finally, the analysis was conducted on the remaining 138 participants who answered the questionnaires completely.

### Measurements

The 30-item Eysenck Personality Inventory (EPI) (self-esteem) was used to examine the participants’ self-esteem. The participants were asked to answer “yes” or “no” to each item. The inventory’s total scores show the self-esteem score. The score  $\leq 15$  show low self-esteem and scores  $> 15$  show high self-esteem. The validity and reliability of the Persian version were confirmed in different studies with Cronbach’s alpha of 0.88 and 0.87.<sup>[15,16]</sup>

To measure sexual self-concept, the Multidimensional Sexual Self-Concept Questionnaire (MSSCQ) developed by Snell (2001) was used.<sup>[15]</sup> Also according to Snell questionnaire, five subgroups included sexual anxiety and sexual self-efficacy. Sexual esteem, sexual fear, and sexual depression were measured.<sup>[15]</sup> Here, 22 expressive answers are scored based on Likert scale, from 1 (it is not true about me) to 5 (it is completely true about me). Here, two expressions are reversely scored. The measurement is not based on the total scores, but the total scores of every dimension. The Persian version of MSSCQ has been validated by Ziaei *et al.* (2013). Cronbach’s alpha coefficients of this scale is the considered in subscales ranged from 75 to 82.<sup>[17]</sup>

Rogers’ self-concept questionnaire was used to measure general self-concept of the participants. Both validity and

reliability of this questionnaire have been reconfirmed by Nourbakhsh (2004). Cronbach's alpha coefficients of this scale was 0.74.<sup>[18]</sup> The score of 0-7 means positive (natural) and score >7-10 means negative (weak) and scores more than 10 named as neurotic self-concept.

To obtain information about the demographic factors of the participants, a demographic checklist was used.

Given that the population of this study was blind people, contents of the questionnaires were converted to Braille.

The three questionnaires of the EPI (self-esteem), the MSSCQ, and Rogers' self-concept questionnaire along with demographic checklist, all converted to Braille, were distributed among the participants who were asked to answer all questions precisely. Besides, those participants who were willing to answer the questions on a computer were provided with a file containing all questionnaires (the text files were converted to audio files via special software). At the end, the answers in Persian Braille were converted to common Persian scripts by someone familiar with both Persian Braille and common Persian scripts.

With regard to the specific situation of the blind people and their lack of familiarity with the apparent sexual content, the participants were assured that complete confidentiality will be maintained about their information and the overall results would be published as general data in the form of an article.

### Statistical analysis

The collected data were analyzed using Statistical Package for the Social Sciences (SPSS) software (version 22) (SPSS-Inc., Chicago, US). Quantitative data were reported by mean  $\pm$  standard deviation (SD) and qualitative data were reported by number and percent. Quantitative data were analyzed by independent sample *T*-test and Pearson correlation to measure the correlation between quantitative variables. For data analysis, 0.05 level of significant was selected.

## RESULTS

The mean age of the participants in this study was  $30.9 \pm 8$  years. Forty-eight participants (34.8%) were men and 62 (44.9%) were married. The mean age of the men and women participants were  $31.1 \pm 8$  years and  $30.7 \pm 8$  years, respectively ( $P = 0.78$ ).

The mean of self-esteem score was  $16.62 \pm 2.85$ ; accordingly, 48 (34.8%) participants obtained low self-esteem scores (below 15). The mean general self-concept score was  $10.6 \pm 3.19$ ; therefore, 15 (10.9%) participants had normal positive self-concept, 53 (38.4%) had low negative self-concept and 70 (50.7%) had neurotic self-concept (above 10) [Figure 1].

The mean of self-esteem and general self-concept score did not differ significantly concerning gender and marital status [Table 1].

The mean of sexual self-concept scores in five subscales of sexual anxiety, sexual self-efficacy, sexual self-esteem, sexual fear, and sexual depression were respectively  $19.53 \pm 4.53$ ,  $23.54 \pm 4.54$ ,  $12.96 \pm 4.19$ ,  $13.48 \pm 1.76$ , and  $5.38 \pm 2.36$ .

The results showed that the mean of sexual anxiety, sexual self-efficacy, and sexual fear scores in terms of marital status were significantly different ( $P < 0.001$ ,  $P = 0.03$ , and  $P < 0.001$ ). But any of sexual self-concept dimensions were not significantly different based on gender [Table 2].

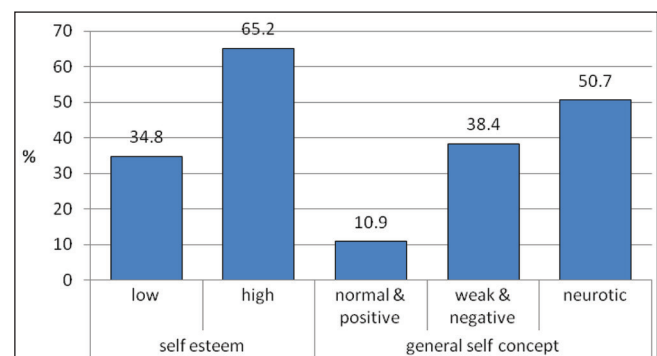
According to the Pearson correlation results, there was a positive significant relationship between general self-concept and self-esteem ( $r = 0.19$ ,  $P = 0.025$ ). Also, there were a positive significant relationship between general self-concept and two dimensions of sexual self-concept; sexual anxiety ( $r = 0.23$ ,  $P = 0.005$ ) and sexual fear ( $r = 0.18$ ;  $P = 0.028$ ). Negative significant relationship were between general self-concept and sexual self-efficacy ( $r = -0.28$ ,  $P = 0.001$ ) and sexual self-esteem ( $r = -0.34$ ,  $P < 0.0001$ ) [Table 3].

There is same significant relationship between self-esteem and dimensions of sexual self-concept as shown in Table 3.

**Table 1: Mean and standard deviation of self-esteem and general self-concept in terms of gender and marital status**

Variables	Self-esteem		Self-concept	
	Mean $\pm$ SD	<i>P</i> *	Mean $\pm$ SD	<i>P</i> *
Total	16.62 $\pm$ 2.85	-	11 $\pm$ 5.83	-
Gender				
Men	16.9 $\pm$ 2.64	0.4	10.45 $\pm$ 3.16	0.41
Women	16.47 $\pm$ 6.84		11.3 $\pm$ 6.84	
Marital status				
Married	16.31 $\pm$ 2.87	0.25	9.98 $\pm$ 3.33	0.062
Single	16.87 $\pm$ 2.83		11.84 $\pm$ 7.17	

Based on two independent sample *T*-test



**Figure 1: Distributions of general self-concept and self-esteem in the participants**

**Table 2: Mean and standard deviation of sexual self- concept dimensions based on gender and marital status**

Dimensions of sexual self- concept	Gender			Marital status		
	Men	Women	P*	Married	Single	P*
Sexual anxiety	10.13±3.99	11.48±4.57	0.09	9.31±3.87	12.39±4.36	<0.001
Sexual self-efficacy	18.65±4.56	20.01±4.48	0.092	20.45±4.33	18.79±4.59	0.032
Sexual self-esteem	12.17±4.28	13.38±4.16	0.11	13.37±4.02	12.62±4.39	0.3
Sexual fear	13.3±1.6	13.56±1.84	0.48	12.63±1.55	14.17±1.61	<0.001
Sexual depression	4.94±2.07	5.61±2.48	0.11	5.06±2.28	5.63±2.42	0.16

Based on two independent sample T-test

**Table 3: Correlation between self-esteem and self-concept in all studied population**

	Self -concept	Self -esteem	Sexual anxiety	Sexual self-efficacy	Sexual self-esteem	Sexual fear	Sexual depression
Self -concept	1	.191*	.238**	-.283**	-.349**	.187*	.138
Self -esteem		1	.499**	-.260**	-.340**	.255**	.324**
Sexual anxiety			1	-.379**	-.488**	.529**	.694**
Sexual self-efficacy				1	.730**	-.191*	-.402**
Sexual self-esteem					1	-.223**	-.417**
Sexual fear						1	.296**
Sexual depression							1

\*Correlation is significant at the 0.05 level (two-tailed); \*\*Correlation is significant at the 0.01 level (two-tailed)

Although, sexual depression has no significant relationship with general self-concept, but between sexual-esteem and general sexual self-concept there was a positive correlation.

According to the Pearson correlation results, there was a positive significant relationship between general self-concept and self-esteem in men and single participants ( $r = 0.32$ ,  $P = 0.023$ ), ( $r = 0.30$ ,  $P = 0.008$ ) but there was no significant relationship between women and married blind people. Also, there were a negative significant relationship between general self-concept and sexual self-esteem ( $r = -0.34$ ,  $P = 0.017$ ) in men. Among women and married participants, there were positive significant relationship between general self-concept and sexual anxiety ( $r = 0.27$ ,  $P = 0.008$ ), ( $r = 0.25$ ,  $P = 0.04$ ), and negative significant relationship with Sexual self-efficacy in men and single participants ( $r = -0.33$ ,  $P = 0.002$ ), ( $r = -0.35$ ,  $P = 0.002$ ), and also negative significant relationship with sexual self-esteem in both gender and single blind ( $r = -0.34$ ,  $P = 0.017$ ), ( $r = -0.34$ ,  $P = 0.001$ ), ( $r = -0.45$ ,  $P = 0.0001$ ) [Tables 4 and 5].

In women and single participants, there was a negative significant relationship between self-esteem with sexual self-efficacy ( $r = -0.36$ ,  $P < 0.0001$ ), ( $r = -0.39$ ,  $P < 0.0001$ ), and sexual self-esteem ( $r = -0.40$ ,  $P < 0.0001$ ), ( $r = -0.38$ ,  $P = 0.001$ ). Also, there is another correlation between variables in terms of gender and marital status [Tables 4 and 5].

## DISCUSSION

The overall objective of the present study was descriptions of self-esteem and general and sexual self-concepts in blind people supported by Isfahan Province Welfare

Organization. According to the obtained results, 65.2% of the participants had high self-esteem scores. When the environment is supportive of the visually impaired people, they are then helped to create and sustain their positive self-esteem and consequently develop social skills<sup>[19]</sup> as the participations in this study supported by the Welfare Organization. Also, more than 50 (50.7%) participants achieved high score in general self-concept (neurotic self-concept) and a significant positive relationship between self-esteem and general self-concept. Lifshitz, *et al.* (2007) and Beaty (1992) believed that self-concept in higher scores of visual impaired respects to defense mechanisms, they may cope with subordinated feelings by creating an ideal concept which is not genuine but can rise self-esteem.<sup>[20,21]</sup> In a study on a group of ordinary women, Ramezani *et al.* (2011) also found a significant relationship between general self-concept and self-esteem.<sup>[22]</sup> Taylor *et al.* (2007) examined the relationship between self-concept and general health on a group of healthy students and reported a significant positive relationship.<sup>[23]</sup> Studies such as Landazabal and Iturrioz (2009) have controversial results in relationship between self-concept and self-esteem. They showed that there is no significant differences in self-concept and self-esteem in the samples (subjects with and without visual impairment).<sup>[15]</sup> Huurre's results indicated that compared to their sighted peers, people with visual disability have lower self-esteem, social skills, and academic achievement resulting in a need for being supported in psychosocial aspects.<sup>[3]</sup> Considering the reciprocal relationship between general self-concept and self-esteem, general self-concept and social skills training is very important to improve self-esteem in the blind people and it makes them more socially compatible.<sup>[16,23]</sup> Behpajooch *et al.* (2004) studied the effectiveness of social skills training



**Table 4: Correlation between self-esteem and self-concept by gender**

Gender	Self-concept	Self-esteem	Sexual anxiety	Sexual self-efficacy	Sexual self-esteem	Sexual fear	Sexual depression
Men							
Self-concept	1	.328*	.191	-.166	-.343*	.224	.119
Self-esteem		1	.553**	-.084	-.233	.190	.334*
Sexual anxiety			1	-.388**	-.528**	.452**	.749**
Sexual self-efficacy				1	.742**	-.123	-.501**
Sexual self-esteem					1	-.114	-.535**
Sexual fear						1	.334*
Sexual depression							1
Women							
Self-concept	1	.132	.277**	-.330**	-.345**	.179	.161
Self-esteem		1	.478**	-.363**	-.409**	.283**	.320**
Sexual anxiety			1	-.419**	-.516**	.557**	.664**
Sexual self-efficacy				1	.714**	-.240*	-.400**
Sexual self-esteem					1	-.292**	-.406**
Sexual fear						1	.274**
Sexual depression							1

\*Correlation is significant at the 0.05 level (two-tailed); \*\*Correlation is significant at the 0.01 level (two-tailed)

**Table 5: Correlation between self-esteem and self-concept by marital status**

Marital status	Self-concept	Self-esteem	Sexual anxiety	Sexual self-efficacy	Sexual self-esteem	Sexual fear	Sexual depression
Married							
Self-concept	1	.001	.254*	-.168	-.202	.203	.118
Self-esteem		1	.359**	.014	-.244	-.127	.292*
Sexual anxiety			1	-.177	-.425**	.366**	.737**
Sexual self-efficacy				1	.682**	-.004	-.247
Sexual self-esteem					1	-.159	-.361**
Sexual fear						1	.240
Sexual depression							1
Single							
Self-concept	1	.302**	.193	-.351**	-.451**	.128	.135
Self-esteem		1	.533**	-.395**	-.386**	.402**	.320**
Sexual anxiety			1	-.454**	-.533**	.503**	.677**
Sexual self-efficacy				1	.761**	-.215	-.491**
Sexual self-esteem					1	-.240*	-.446**
Sexual fear						1	.297**
Sexual depression							1

\*Correlation is significant at the 0.05 level (two-tailed); \*\*Correlation is significant at the 0.01 level (two-tailed)

in enhancing self-esteem of blind students and found significant difference between the experimental and control groups indicating the effectiveness of social skills training in improving self-esteem closely related to self-concept.<sup>[24]</sup>

The results of this study indicated that self-esteem and self-concept were not significantly related to gender of the blind. Salehi *et al.* (2013) showed no significant difference in self-esteem between men and women with physical disabilities and motor impairments.<sup>[16]</sup>

Analysis of sexual self-concept's subscales indicated no significant difference between blind men and women. However, the results showed that marital status affects sexual self-concept so as subscales of sexual anxiety and

sexual fear were significantly higher in single participants and subscales of sexual efficacy was significantly higher in married participants. In the Isfahan University of Medical Sciences, Salehi *et al.* (2013) conducted a study and found that women gained significantly higher scores in almost all subscales of sexual self-concept (i.e. sexual self-concept, sexual anxiety, sexual self-efficacy, sexual self-esteem, sexual fear, and sexual depression) with the exception of the subscale of sexual self-esteem in which, no significant difference was observed between men and women.<sup>[16]</sup> In a study done by Papadopoulos (2009), the level of sexual self-concept was very low among both blind and visually impaired youths. Moreover, he found that the level of sexual self-concept is significantly related to gender and the time and severity of visual impairment.<sup>[25]</sup>

Previous studies have shown that sexual self-concept is a psychological concept and its dimensions are related to various personal and social factors in an individual's life. It has also been indicated that married people have usually higher sexual self-concept compared to single people<sup>[12]</sup> that can be explained through either that people with positive sexual self-concept tried to get married or that these people gained positive self-concept after marriage. McCabe *et al.* (2003) showed that disability affects both sexual self-esteem and sexual depression in men and women so that in cases of severe disabilities, sexual depression is high and sexual self-esteem is very low.<sup>[26]</sup>

The present study results revealed that people with high self-esteem gained higher scores in sexual anxiety and lower scores in self-efficacy compared to people with low self-esteem. Moreover, sexual self-esteem was lower in people with lower self-esteem while sexual fear was higher in people with high self-esteem. Ziaei *et al.* (2013) mentioned the vagueness of sexual experience, lack of familiarity with the genitals of the opposite sex, lack of awareness about how to establish sexual relationships, the uncertainty of future sex life, and the possibility of harming the sexual partner as causes of sexual anxiety.<sup>[27]</sup> Deutsch and Hensel indicated that high scores in sexual depression and low scores in self-esteem are predictors of less inclination to have sex and lower sexual satisfaction scores.<sup>[13,28]</sup> Other studies have specified that people with high positive sexual self-concept tend to experience sexual relationships in future while those with low negative sexual self-concept tend less to experience sexual relationships in near future.<sup>[29]</sup> Furthermore, people with high sexual self-concept talk about their sexual desires more freely, particularly when their interlocutors are people with similar level of sexual self-concept.<sup>[13]</sup> Sexual self-concept can be affected by sexual experiences in adolescence.<sup>[28]</sup>

Studies have shown that people with different characteristics and different levels of sexual self-concept can be involved with high-risk sexual behaviors. Therefore, it is necessary to pay more attention to people's level of sexual self-concept to protect them from high-risk sexual behaviors and lead them toward safe sex.<sup>[14]</sup> In another study conducted by Lifshitz *et al.*, two groups of people with and without visual disabilities (40 participants in each group) were compared regarding sexual self-concept and no significant difference was reported between them.<sup>[21]</sup>

## CONCLUSION

According to the obtained results in this study, we need to design a qualitative research to find the effective factors on positive correlation between general self-concept and negative sexual self-concept such as sexual anxiety and

sexual fear, and negative correlation between positive sexual self-concept such as sexual self-efficacy and sexual-esteem. Consequently, we can provide an individual counseling based on the sexual self-concept, if the blind or visually impaired people face with problems in their sexual relationships.

## Limitations and strengths of the study

Some of the limitations of this study include samples' homogeneity, their being limited to a city, the absence of a comparison group without visual impairment in similar conditions. Sexual topic is a taboo especially for blind people who did not talk about it with others until this project. Therefore, we lost more participants in this study. Also, because the authors did not find a study with similar variables and tools inside and outside Iran, comparison and justification of the results did not cover a wide range of reasons.

One of the strengths of this study is giving importance to the sexual issues of visual impaired people as one of their essential requirements for a successful sex life to maintain and continue their married life.

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## Conflicts of interest

There are no conflicts of interest.

## AUTHOR'S CONTRIBUTIONS

MS contributed in the conception of the work, conducting the study concept and design, analysis and interpretation of data, revising the draft, approval of the final version of the manuscript, and agreed for all aspects of the work, approval of the final version of the manuscript, and agreed for all aspects of the work. TZ contributed in the conception of the work, conducting the study concept and design, Analysis and interpretation of data, drafting of the manuscript, revising the draft, critical revision of the manuscript for important intellectual content, approval of the final version of the manuscript, and agreed for all aspects of the work MS contributed in the conception of the work, approval of the final version of the manuscript, and agreed for all aspects of the work. TZ also contributed in the administrative, technical, and material support. AA contributed in the conception of the work, conducting the

study concept and design, acquisition of data, drafting of the manuscript, revising the draft, approval of the final version of the manuscript, and agreed for all aspects of the work. KSH contributed in the conception of the work, revising the draft, approval of the final version of the manuscript, and agreed for all aspects of the work. BSH contributed in the conception of the work, revising the draft, approval of the final version of the manuscript, and agreed for all aspects of the work.

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