Research Paper

Determinants of Students' Attitudes Toward People With Physical-Motor Disability

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ABSTRACT

Objective: This study examined the role of social desirability, self-esteem, and some demographic variables in predicting university students' attitudes toward people with physical-motor disabilities.

Methods: The participants in this cross-sectional study were 300 students of Kurdistan University, Sanandaj city, Iran, selected using convenience sampling. The students completed the items in the Google forms of the Marlowe-Crowne social desirability scale (MC-SDS), Rosenberg self-esteem scale (Rosenberg, 1965b), a demographic information form, and the multidimensional attitudes scale towards persons with disability (MAS). The collected data were analyzed using the Pearson correlation coefficients and hierarchical linear regression analysis in SPSS software v. 23.

Results: The results showed significant attitudinal differences in students with different demographic characteristics except for gender and education ($P<0.05$). In addition, social desirability and self-esteem were stronger predictors of the students' attitudes toward people with physical-motor disability than each variable alone ($P>0.05$).

Conclusion: Various demographic variables and other factors like self-esteem and social desirability affect students' attitudes toward people with physical-motor disabilities. A key implication of the present study is that the role of tested variables could differ depending on cognitive, affect, and behavioral dimensions of attitudes. Researchers must pay attention to this point in future studies.

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Highlights

- Attitudes toward disability constitute multidimensional evaluations of people and can be negative, positive, or a combination of both.

- The present study is one of the first to focus on people with physical disabilities in Iran.

- Various demographic variables and other factors like self-esteem and social desirability affect students' attitudes toward people with physical-motor disabilities.

Plain Language Summary

Attitude is one of the basic concepts of social psychology and is defined as fixed and concise evaluations of individuals, ideas, and objects. People with disabilities are often excluded from mainstream society and have been neglected in previous studies. The findings indicate that the students with different demographic characteristics have significantly different attitudes toward people with disabilities. Social desirability and self-esteem affect students' attitudes toward people with disabilities: the higher social desirability and self-esteem, the less the negative attitude toward the disabled.

1. Introduction

Disability is now an inseparable part of human existence due to the extreme population growth and remarkable demographic changes in societies (Wang et al., 2021). The rate of disability in low-income countries is considerably higher than that in developed nations (Khan et al., 2020). According to global estimates, over one billion people with disabilities live worldwide (World Health Organization, 2011). Besides, about 80% of them live in low-income countries (Khan et al., 2020). In Iran, up to 2.5 million people, accounting for about 4% of the population, suffer from physical, mental, sensual, or psychological disabilities. Moreover, 40% have a physical-motor disability (Dastyar & Mohammadi, 2019). By definition, physical-motor disability is any condition that impedes sensation, movement, or coordination and even the use of aids and equipment like wheelchairs (Sharifi, et al., 2016).

People with physical-motor disabilities face many physical, social, political, and economic problems in their everyday life and, thus, cannot move and participate freely in social activities. They have many challenges in performing such activities (Khan et al., 2020). Social activities are vital for people with disabilities. Moreover, the increased interaction with people without a disability may help improve the quality of the lives and mental health of people with disabilities (Tough, et al., 2017). However, this group of people may face a negative attitude toward people without disabilities (Li, Tsoi, & Wang, 2012).

Attitude is one of the basic concepts of social psychology and is defined as fixed and concise evaluations of individuals, ideas, and objects. Attitudes emerge automatically and unintentionally when individuals develop ideas about different issues (Szumski, Smogorzewska, & Grygiel, 2020). Attitudes toward disability constitute multidimensional evaluations of people and can be negative, positive, or a combination of both (Wang et al., 2021). Some studies have addressed the impact of different attitudes. For example, positive social attitudes can help people with disabilities join social groups and be accepted by family members, friends, and people in their surroundings (Findler, Vilchinsky, & Werner, 2007), while negative attitudes can lead to lower expectations, discrimination, and marginalization (Kleintjes, Lund, & Swartz, 2013). However, there are almost no consistent findings on the degree and type of attitudes toward the disabled. A study on 262 Pakistani students found that about 43% had positive attitudes toward people with disabilities, and 56% had negative attitudes (Khan et al., 2020). However, another study found that 61% of students had positive attitudes compared to 21% who showed negative attitudes toward people with disabilities (McDougall, et al., 2004). A review study on healthcare students' and experts' attitudes toward people with disabilities showed that the respondents generally had more favorable attitudes. However, several studies reported that some people experienced fear and anxiety when meeting people with disabilities (Satchidanand et al., 2012). Researchers tried to explain the differences and contradictions in attitudes using various factors (Szumski et al., 2020). Accordingly, the present study focuses on

several factors, including social desirability, self-esteem, demographic variables, and their impacts on attitudes.

Social desirability refers to a person's tendency to develop a good image of themselves so that others would look at them positively (Holden, 2010). Even though the relationship between social desirability and attitudes toward others has been the research subject for a long time, there is limited, even contradictory, evidence about people with disabilities (Kim, Lu, & Estrada-Hernandez, 2015). Two studies (from Switzerland and South Korea) found that the higher the social desirability, the more positive the attitude toward people with disabilities (Keller & Siegrist, 2010; Kim et al., 2015). In contrast, a study showed that Ethiopian students were less likely to behave according to the desired social norm in their encounters with people with disabilities (Getachew, 2011). Another study in Poland examined the relationship between social desirability and the behavioral and cognitive dimensions of attitude. The findings showed no significant relationship between social desirability and the cognitive domain. However, there was a slightly positive correlation between social desirability and the behavioral aspect of attitudes (Kowalska & Winnicka, 2013).

Self-esteem is a significant indicator of psychological adaptation and refers to self-confidence to succeed, lead a happy life, feel valuable, have a right to express one's feelings and demands, and enjoy the outcome of one's efforts (Rosenberg, et al., 1995). De Laat, Freriksen, and Vervloed (2013) found that children and students with higher self-esteem have a more positive attitude toward blind and deaf people but not toward paralyzed people. In addition, another study found that people with higher self-esteem have significantly more positive attitudes toward people with disabilities (Findler et al., 2007). Various studies have also addressed the impact of demographic variables. For instance, in their systematic review study, Wang et al. (2021) explored the impact of gender, age, education, familiarity with disabilities, contact, job, and religion on attitude. However, there has been a greater focus on gender and age than other demographic variables. Accordingly, in most studies, women had a more positive attitude toward people with disabilities than men (De Laat et al., 2013; Li et al., 2012). Nevertheless, some studies reported no significant difference between men's and women's attitudes toward people with disabilities (Kim et al., 2015). Studies on the role of age did not show congruous results. For instance, some studies have reported that younger respondents had a more positive attitude toward people with disabilities (Uysal, et al., 2014), while others reported opposite findings (Patka, et al., 2013).

The present study can be significant from several perspectives. First, people with disabilities are often excluded from mainstream society and have been neglected in previous studies. Thus, more studies are needed to raise awareness about people with disabilities and highlight their need for more support. Second, although some studies have addressed the determinants of attitudes toward people with disabilities, as noted in the previous sections, these studies have not typically reported consistent results. Besides, they have focused on different target groups. However, students are among less focused groups in these studies. For example, contrary to other studies, Getachew (2011) showed that students are reluctant to treat people with disabilities in a socially favorable manner. Furthermore, Bossaert, et al., (2011) examined only people with mental disabilities, not physical disabilities. These different and sometimes contradictory findings justify the need for further studies in this area. Third, to our knowledge, the present study is one of the first to focus on people with physical disabilities in Iran. The results of this study can be compared with findings from other countries and cultures. The insights from this study, in turn, can contribute to enriching the literature. Fourth, the present study focuses on students' attitudes as one of the influential groups in society. Thus, it is essential to explore students' attitudes as they can influence other groups in society. Besides, they can play a vital role in improving, strengthening, and establishing an educated society. Fifth, the present study addresses physical-motor disabilities. Although disabilities are very heterogeneous, some of the disabilities are immediately visible in the first encounters and are more prone to labeling. Therefore, unlike some similar studies (Khan et al., 2020; Szumski et al., 2020), the present study focuses on people with visible disabilities (physical-motor disabilities) who use wheelchairs and examines students' attitudes towards this group of people.

2. Materials and Methods

Study participants and sampling

The present study used a descriptive correlational design. The participants were 300 students of Kurdistan University, Sanandaj City, Iran, in the academic year 2020-2021. The students were selected using the convenience sampling method. Because of the COVID-19 pandemic, the students completed an online survey using the questionnaires in Google Forms. Of 300 questionnaires, we used the data from 282 questionnaires. The inclusion criteria were being a university student, having Iranian nationality (Kurdistan University has a significant number of students from other countries), and hav-

ing consent to participate in the study. The participants who filled in the questionnaires incompletely were excluded from the study.

Study instruments

The Demographic Information Form: The demographic information form assessed the students' age, gender, field of study, education, religion, and familiarity with disabilities.

Multidimensional Attitudes Scale (MAS) towards persons with disability

The Multidimensional Attitudes Scale (MAS) towards persons with disability was developed by Findler et al. (2007) to measure the cognitive, affective, and behavioral dimensions of attitude toward people with disabilities (especially people who use wheelchairs). The original version of the MAS had 34 items rated on a 5-point Likert-type scale (1: never, 2: rarely, 3: sometimes, 4: usually, 5: most of the time). Higher scores show a more negative attitude. The internal consistency coefficient was measured using the Cronbach α for the cognitive subscale 0.88, the affect subscale 0.90, and the behavioral subscale 0.83 (Findler et al., 2007). In Iran, the reliability and validity of the MAS were measured for students (Vakilizad & Faramarzi, 2017).

The internal consistency coefficient of the items with the total score in 23 items was significant and ranged from 0.48 to 0.53. Factor analysis confirmed the adequacy of the scale in the three affective, cognitive, and behavioral factors as they explained 41.3% of the variance in point. The Cronbach α for the subscales ranged from 0.80 to 0.86, and the total α value was 0.83. The split-half reliability coefficient for subscales ranged from 0.65 to 0.82, and the total α value stood at 0.71. The test-retest coefficient for the subscales varied from 0.53 to 0.61, and the α value for the scale was equal to 0.65, confirming the acceptable validity of the MAS in Iranian society (Vakilizad & Faramarzi, 2017). In this study, the Cronbach α was 0.86, which confirmed the scale's reliability.

Marlowe-Crowne Social Desirability Scale (MC-SDS)

Marlowe-Crowne Social Desirability Scale (MC-SDS) was developed by Crowne and Marlowe (1960) and contained 33 true-false questions. The total score is estimated based on the number of true and false answers. Accordingly, those with a score between 0 and 8 have less social desirability and are probably members of minority groups. Scores between 9 and 19 show a moderate level of social desirability, and a respondent with this score follows social norms in their behavior. Scores between 20 and 30 confirm that the respondent's behavior is highly compatible with social conventions. The internal consistency and test-retest consistency of the original version of the scale were 0.88 and 0.89, respectively (Crowne & Marlowe, 1960). In Iran, the validity coefficient of social desirability was greater than 0.80 with the test-retest method. In terms of construct validity, this scale had a high correlation with other psychological instruments (Ganji, 2005). The instrument's reliability was estimated as 0.69 using the Cronbach α method in the present study.

Rosenberg Self-esteem Scale

Rosenberg self-esteem scale was designed by Rosenberg (1989) and is one of the most common scales to measure self-esteem. It gives the respondent a general picture of positive and negative attitudes toward oneself (Rosenberg, 1989). The scale is a 10-item measure rated on a 4-point Likert-type scale (1: strongly disagree to 4: strongly agree). Items 1, 3, 4, 7, and 10 are directly scored, and items 2, 5, 6, 8, and 9 are scored in reverse. The Guttman coefficient for the scale was 0.92, showing its excellent internal consistency. The test-retest validity values were 0.85 and 0.88 over two weeks, indicating the excellent consistency of the scale (Rosenberg, 1989). In Iran, the scale's reliability was analyzed using the Cronbach α, test-retest, and half-split methods, and the coefficients were 0.69, 0.78, and 0.68, respectively. The concurrent validity of the scale against the Coopersmith self-esteem inventory was estimated to be 0.61 (Mohammadi, 2005). In this study, the Cronbach α for the scale was reported to be 0.75, showing its acceptable reliability.

Study procedure

First, the scales were prepared in Google Forms, and then their links were made available for the students via instant messaging apps like Telegram and WhatsApp, public channels, and the university website. The link also contained information on the goals and significance of the study and on how the students fill in the questionnaires. In compliance with ethical considerations, the researcher explained the study's objectives to the students. They were told that their participation was non-compulsory and that the participant's personal information would be kept confidential. Moreover, the students were not required to register their identity information. The students also received precise information on how to answer the questionnaires. They have access to a contact address (mobile number and email) to ask their question or resolve any ambiguity while completing the question-

naires. The respondents received the ethical protocols in the form of a ready-made text containing the link to the questionnaires. Finally, the data collected from the students' responses were analyzed through the Pearson correlation coefficient test and hierarchical linear regression analysis in SPSS software v. 21.

3. Results

In the present study, 84 participants (29.8%) were men, and 198 (70.2%) were women. The Mean±SD age of the male and female participants were 25.31±8.22 and 22.8±5.01 years, respectively. Moreover, 175 respondents (62.1%) were 22 years old or younger, 54 persons (19.1%) were aged between 23 and 27, and 53 respondents (18.8%) were aged between 28 and 32 years. Besides, 193 respondents (68.4%) were undergraduate students, 71 (25.1%) were graduate students, and 18 (6.4 %) were PhD and post-doctorate students. Meanwhile, 66 students (22.7%) stated they were familiar with disabilities and their conditions. Besides, 93 students (33%) were studying Psychology, and 198 students (0.67) were majoring in other fields. As for religion, 53 respondents (18.8%) stated that they had little or no religious belief, 177 (62.8%) were moderately religious, and 52 (18.4 %) were very religious.

As shown in Table 1, the average score of the affective and behavioral dimensions of attitudes among the female students was significantly different compared to the male students, indicating that the female students had fewer negative attitudes toward people with disabilities (P=0.02 vs P=0.05). However, there was no significant difference between the male and female students regarding the cognitive domain and their overall attitudes. The students who were familiar with disabilities reported less negative attitudes compared to the students who were not familiar with disabilities. Furthermore, compared to other majors, psychology students reported less negative attitudes toward people with disabilities (P=0.045).

According to Table 2, the F value (1.46) was not significant for the participants' education (P>0.05). However, the F value (4.79) was significant for the total score of attitude in terms of age. This finding indicates that the students in different age groups differed in their attitudes about people with disabilities. The results of the Scheffé test showed that students who were 22 years old and younger had more negative attitudes toward people with disabilities than those who were 28 and older. The table also shows that the F value (3.86) was significant for the total score of attitude in terms of religion (P<0.05). The findings of the Scheffé test indicated that religious students expressed less negative attitudes toward people with disabilities than those less religious.

Table 3 presents that social desirability has a negative and significant relationship with the attitude and the three cognitive, affective, and behavioral dimensions (P>.001). Similarly, self-esteem significantly correlates with the overall attitude and the cognitive and affective dimensions (P>.001).

The results of hierarchical regression analysis shown in Table 4 indicate that the interaction term between social desirability and self-esteem was significant (Model 2). In Model 1, social desirability and self-esteem separately predicted attitudes toward people with disabilities. However, the interaction between social desirability and self-esteem predicts 1.2% (R^2=0.277) of the attitude above the main effects (R^2=0.265). Thus, the model predicted some 28% of the attitudes. The curve in Figure 1 depicts the interaction term between self-esteem and desirability and confirms the expected impact. As can be seen, the

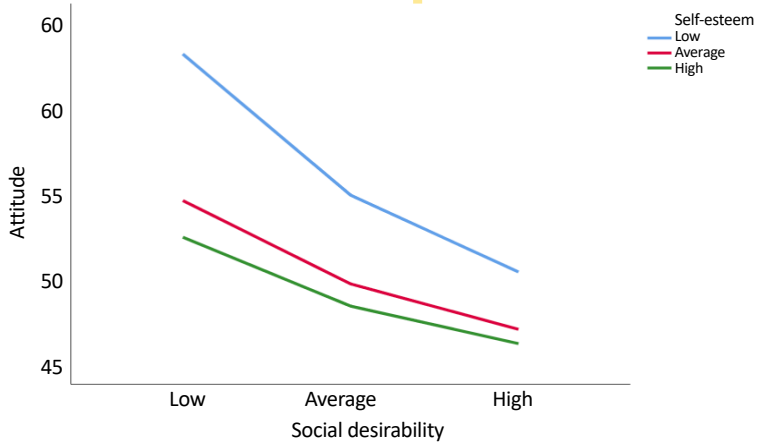

Figure 1. Interactive effect of self-esteem and social desirability in predicting attitudes (t=2.14, P=0.001)

Table 1. A Comparison of the participants' demographic characteristics and attitudes

Characteristics	Variables		No.	Mean±SD	t	df	P
Gender	Affect	Male	84	22.61±7.57	2.35	280	0.020*
		Female	198	20.27±7.81	2.32	158.208	
	Cognition	Male	84	24.34±7.82	1.96	280	0.051
		Female	198	22.32±7.91	1.95	158.061	
	Behavior	Male	84	8.91±2.44	1.97	280	0.050*
		Female	198	8.23±2.79	1.98	175.957	
	Total	Male	84	53.53±13.97	0.200	280	0.841
		Female	198	53.16±14.23	0.202	159.196	
Familiarity	Affect	Yes	66	20.81±5.56	-1.30	280	0.110
		No	218	22.24±8.21	-1.60	151.92	
	Cognition	Yes	66	22.12±7.79	3.18	280	0.002*
		No	218	25.65±7.81	3.18	102.63	
	Behavior	Yes	66	8.11±2.66	3.79	280	0.001**
		No	218	9.53±2.50	3.92	108.55	
	Total	Yes	66	51.04±12.21	2.76	280	0.049*
		No	218	57.42±14.58	2.94	120.62	
Field of study	Affect	Psychology	93	21.91±8.16	0.01	280	0.999
		Other Fields	189	21.92±6.72	0.01	217.91	
	Cognition	Psychology	93	22.23±8.33	2.10	280	0.036*
		Other Fields	189	24.33±6.85	2.25	218.158	
	Behavior	Psychology	93	7.94±2.55	4.50	280	0.001**
		Other Fields	189	9.43±2.77	4.41	193.67	
	Total	Psychology	93	52.09±14.57	2.01	280	0.045*
		Other fields	189	55.67±12.93	2.09	203.86	

* P<0.05; ** P<0.001.

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negative relationship between social desirability and attitude is modified by self-esteem. In other words, among those students with a high level of self-esteem, increased social desirability was associated with less negative attitudes toward people with disabilities.

4. Discussion

The present study examined the students' attitudes toward people with disabilities. The findings indicated that the students with different demographic characteristics had significantly different attitudes toward people with disabilities. However, these differences were not significantly different between male and female students or studying at different academic levels. Moreover, the cognitive, affective, or behavioral dimensions of attitudes were not similarly correlated with variables like gender, the field of study, and familiarity with disabilities. For example, the male and female students did not have significantly different attitudes, indicating that gender was

Table 2. Results of the one-way analysis of variance (ANOVA) to compare the impact of education, age, and religion on attitudes

Characteristics	Source of Changes	df	Sum of Squares	Mean Square	F	P
Education	Between Groups	3	859.320	43.14	1.46	0.224
	Within Groups	278	53939.72			
	Total	281	1964.24			
Age	Between Groups	3	2761.17	920.39	4.79	.003**
	Within Groups	278	53351.26			
	Total	281	56112.43			
Religion	Between Groups	2	54.77	27.38	3.86	0.022*
	Within Groups	279	1980.58			
	Total	281	2035.35			

* P<0.05, ** P<0.001.

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not an intervening variable in attitudes. However, the affective and behavioral dimensions of attitude significantly differed between the male and female students. Accordingly, the female students had less negative attitudes toward people with disabilities regarding these two dimensions than the male students. Similarly, another study showed that women have less negative attitudes in terms of the behavioral dimension compared with men (Findler et al., 2007). Although there is no consensus on the relationship between attitude and gender, the relationship between attitude and the other two dimensions was significant. Thus, in line with previous studies, it can be argued that women hold a more positive attitude toward people with disabilities than men (De Laat et al., 2013; Li et al., 2012). This finding can be attributed to the fact that women in most societies are commonly viewed as caregivers. Hence, although women are not cognitively different from men, they may feel duty-bound to play a positive social role in treating people with special needs even if their behavior is at odds with women's cognition (Findler et al., 2007).

The present study's findings showed that the students who had disabled acquaintances reported less negative affective, cognitive, and behavioral attitudes. Moreover, psychology students expressed less negative attitudes only in terms of behavioral and cognitive dimensions. Furthermore, following the findings of this study, most studies (Alnahdi, 2019; Lawson, Cruz, & Knollman, 2017) report that personally knowing people with disabilities induces more positive attitudes toward these people. These findings can be explained by cognitive dissonance theory (Festinger, 1957), suggesting that people have an inner drive to hold all their attitudes and behavior in harmony and avoid disharmony. When there is an inconsistency between attitudes or behaviors, they tend to change our attitudes to eliminate the dissonance. Therefore, it seems that more interaction with people

Table 3. Correlations between the variables

Variables	1	2	3	4	5	6
1. Affect	-					
2. Cognitive	0.34**	-				
3. Behavioral	0.23**	0.43**	-			
4. Attitude (Total)	0.78**	0.83**	0.56**	-		
5. Self-Esteem	-0.33**	-0.29**	-0.07	-0.36**	-	
6. Social desirability	-0.29**	-0.49**	-0.32**	-0.45**	-0.28**	-

* P<0.05, ** P<0.001.

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Table 4. Summary of the variables entered into the regression analysis

Models	Variables	R	R^2	F	B	SE B	β	t
Model 1	Social desirability	0.515	0.265	50.22**	-1.23	.171	-0.385	-7.19**
	Self-esteem				-.858	0.184	-0.250	-4.68**
Model 2	Social desirability	0.526	0.277	35.44**	0.084	0.039	0.542	2.14**
	Self-esteem	0.084	0.039					

* P<0.05, ** P<0.001.

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with disabilities in society can be highly conducive to changing people's attitudes and decreasing their negative views (Male, 2011).

It might be challenging to explain why the differences between various groups of students were not significant in terms of the affective domain, as was also the case with affective and behavioral dimensions. However, it seems that the students of psychology can gain a deeper insight into people with disabilities and also their capabilities and needs. This knowledge can also help students better know these people, and they try to change their behaviors and attitudes accordingly.

The data in this study showed a significant difference between different groups of students in terms of religious beliefs and age but not education. Thus, compared to less religious and younger students, more religious and older students report less negative attitudes toward people with disabilities. Although age is not synonymous with maturity and life experience, it might be argued that people could develop a reflective disposition regarding all life issues, including disability, when they get older. The impact of age on attitudes toward people with disabilities have already been confirmed (De Laat et al., 2013; Patka et al., 2013; Vincent-Onabajo & Malgwi, 2015). Meanwhile, studies have shown that religion and spirituality are correlated with attitudes toward people with disabilities. However, some studies (De Laat et al., 2013; Findler et al., 2007) found no significant difference in attitudes regarding religious beliefs. The impact of religious beliefs on people's attitudes toward people with disabilities can be explained by Islam's teachings, especially in societies like the Iranian community, where Islamic teachings and tenets strongly influence people. The Islamic philosophy highlights positive attitudes toward people with disabilities and those in dire conditions (Al-Aoufi, Al-Zyoud, & Shahminan, 2012). Furthermore, the Qur'an and hadiths not only declare the existence of disability as a natural part of human nature but also provide guidelines and practical recommendations for caring for and treating people with disabilities (Al-Aoufi, et al., 2012).

The present study's findings also show that social desirability and self-esteem affect students' attitudes (especially in terms of affective and cognitive domains) toward people with disabilities: the higher social desirability and self-esteem, the less the negative attitude toward the disabled. Similar findings have been reported by other studies (Findler et al., 2007; Keller & Siegrist, 2010; Kim et al., 2015). A higher level of self-esteem can improve the affective and cognitive aspects of the students' attitudes. However, self-esteem does not play any role in changing behavior toward people with disabilities. This finding has been reported by another study as well (De Laat et al., 2013). Nevertheless, self-esteem is a crucial indicator of psychological adaptation, as people with higher security and self-confidence feel more positive about people with disabilities and are more likely to accept those (Findler et al., 2007). Studies have shown that social desirability is a personality variable, and the need for social approval has a positive relationship with the acceptance of people with disabilities: the greater the need for social approval, the shorter the declared distance toward people with disabilities (Kowalska & Winnicka, 2013). In the process of psychological exchange, these people tend to present a more desirable social image of themselves to gain more social approval, regardless of the circumstances of the people with whom they are connected (Kowalska & Winnicka, 2013).

Self-esteem and social desirability are two independent predictors of students' attitudes, as indicated in this study. However, the interaction between social desirability and self-esteem is a stronger predictor of students' attitudes toward people with physical-motor disability than each variable alone. In contrast, some studies have reported that social desirability has no (Getachew, 2011) or a smaller impact on attitudes toward people with disabilities (Kowalska & Winnicka, 2013). Nonetheless, these conflicting results seem to stem from differences

in cultural norms dominating communities. In some cases, people even do not think they need to show socially positive attitudes toward people with disabilities (Getachew, 2011).

5. Conclusion

In sum, the findings of this study imply that students' attitudes toward people with physical-motor disabilities could be a multifaceted construct affected by different factors, including demographic variables and other factors like self-esteem and social desirability. A key argument in this study is that the role of tested variables in attitudes may vary depending on cognitive, affective, and behavioral dimensions. Thus, future researchers need to focus on each of these dimensions independently. This way, they can come up with more findings and provide a better understanding of the factors underlying attitudes toward people with disabilities. Considering our little knowledge of the threefold nature of attitudes, future studies should examine the interactions between people's emotions, cognition, and behavior in understanding their attitude toward people with disabilities. This knowledge may increase the effectiveness of the approaches and interventions developed to improve the image of people with disabilities. Furthermore, by adapting their interventions to the three components of attitude, therapists can more accurately assess the effects of and differences in interventions in changing attitudes toward people with disabilities. Although it is difficult to change people's beliefs in the short term, macro policies need to consider providing inclusive education for everyone to turn acceptance into a social norm.

This study was conducted with some limitations. First, the data were collected using self-report instruments. Thus, some degree of bias could enter the study's outcomes. Second, the researcher collected the data during the COVID-19 pandemic, and the respondents had to complete the questionnaires online. Thus, the researcher had less control over disturbing factors. Besides, the researcher could not monitor the completion of the questionnaires and resolve the respondents' difficulties when responding to the questions. However, the researcher tried to provide clear instructions to the respondents to help them fill in the questionnaires more accurately. Accordingly, future researchers can use other techniques such as face-to-face interviews to collect more data on the variables in question. Besides, as the present study focused only on physical disabilities, future studies can examine students' attitudes toward other types of disabilities.

Ethical Considerations

Compliance with ethical guidelines

All ethical principles are considered in this article. The participants were informed of the purpose of the research and its implementation stages. They were also assured about the confidentiality of their information and were free to leave the study whenever they wished, and if desired, the research results would be available to them. A written consent has been obtained from the subjects. principles of the Helsinki Convention was also observed.

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Authors' contributions

All authors equally contributed to preparing this article.

Conflict of interest

The authors declared no conflict of interest.

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