

Examining Attitudes of Medical Students toward Individuals with Disabilities

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Abstract

Attitudes of future health professionals is critical to provide inclusive healthcare services. The purpose of this study is to examine attitudes of medical school students toward individuals with disabilities. This study included both quantitative and qualitative analysis of 153 medical school students in Turkey. Results showed that medical students' comfort levels were significantly more positive toward a patient without apparent disability. The relationship between attitudes and comfort levels for a patient with apparent disability was slightly higher than the relationship between attitudes and comfort levels for a patient without apparent disability. Content analysis of open-ended questions indicated the need of disability education in medical school. Exploration of the attitudes of medical school students toward individuals with disabilities provided both practical and theoretical implications into the field.

Keywords: attitudes, disability, medical students

Individuals with disabilities require frequent visits to healthcare institutions (Moscoso-Porras & Alvarado, 2018). Healthcare professionals may have misconceptions, limited experience, and/or inadequate knowledge about disabilities (Byron et al., 2005). This, in turn can influence quality of the services provided to individuals with disabilities

(Dorji & Solomon, 2009), refrain these people from seeking medical care (Moscoso-Porras & Alvarado, 2018), and influence diagnosis and treatment processes (Al-Abdulwahab & Al-Gain, 2003). Attitudes of healthcare professionals are related to how patients with disabilities feel about themselves (Al-Abdulwahab & Al-Gain, 2003). Disability-based discrimination negatively influences psychological wellbeing of individuals, which may result in health inequalities in the society (Krnjacki et al., 2018) and reduced healthcare-seeking behavior (Moscoso-Porras & Alvarado, 2018). As health services are expected to be met by doctors, especially in Turkey, it is crucial to examine the attitudes of medical students toward individuals with disabilities.

Attitudes of medical students toward individuals with disabilities have been widely examined in international context. For example, Sahin and Akyol (2010) examined attitudes of medical and nursing students toward individuals with intellectual disabilities in Turkey. Whilst no difference existed in the attitudes of medical students and nursing students, previous contact and prior knowledge was found to be related to positive attitudes toward individuals with intellectual disabilities. Likewise, Kritsotakis et al. (2017) compared attitudes of nursing, medical, and social work students about physical and intellectual disabilities in Greece. Results indicated medical students had more positive attitudes toward physical disabilities than nursing and social work students did. Although researchers stated attitudes of healthcare professionals might be related to many factors including age, gender, education, training, knowledge, and prior experience; knowledge was the only consistent indicator of positive attitudes about intellectual disabilities in their research (Kritsotakis et al., 2017). Tervo et al. (2004) conducted a cross sectional study with medical students in US and Canada and found that students who had positive attitudes toward individuals with disabilities felt more comfortable in managing rehabilitation situations. In addition, comfort level in managing situations increased by disability related experience. In another study, Paris (1993) examined attitudes of the first-year medical students, the fourth-year medical school students, and health care professionals toward individuals with physical disabilities. Researchers found that fourth-year medical students had more positive attitudes than the first-year medical students did; however, the difference between medical students and healthcare professionals remained unsettled (Paris, 1993).

Negative attitudes influence how individuals handle a difficult situation (Bandura, 1977). In the context of healthcare, previous studies also indicated that healthcare professionals feel uncomfortable in providing services to patients with disabilities (Satchidanand et al., 2012). Likewise, limited knowledge of healthcare professionals may lead to insufficient diagnostic, preventative, and supportive services for individuals with disabilities (Iezzoni & Long-Bellil, 2012). Many physicians indicated that they do not feel comfortable to take care of individuals with disabilities (Larson McNeal et al., 2002; Crane et al., 2021).

It is believed that factors influencing attitudes of healthcare professionals are varied by cultural values, contexts, and populations. Among healthcare professionals, medical doctors play a vital role in delivering services as a result of state health policies in Turkey. Limited research conducted in Turkey to examine medical students' attitudes toward individuals with disabilities (Sahin & Akyol, 2010; Sahin & Gedik, 2020). Specifically, (1) What is the perceived level of attitudes and comfort levels of medical students toward individuals with disabilities? (2) What is the relationship between attitudes and comfort levels of medical students toward individuals with disabilities? are the main research question behind this study. The current study will address the gap in the literature by answering those two research questions and examining medical students' attitudes toward individuals with disabilities.

Materials and Methods

Research Design

A mixed-methods research was used to address the research questions about medical students' comfort levels and attitudes toward individuals with disabilities. A survey that solicits responses through multiple types of questions (i.e. open-ended questions and fixed-choice questions) can be an example of how quantitative measurement and qualitative inquiry are integrated in a research (Patton, 2003). While quantitative data were collected through the Medical Students' Attitudes toward People with Disabilities Instrument (Symons et al., 2012), and Turkish Version of the Multidimensional Attitudes toward Persons with Disabilities (Yelpaze & Türküm, 2018), qualitative data were obtained through open-ended questions in the Disability Background Questionnaire.

Sampling

A purposeful sampling method was used in this study. The sample included 153 medical school students, 66% for females and 34% for males from a private university in Turkey. The mean age of participants was 19.81, ranging from 18 years to 24 years. The majority of the students (57.5%) were freshman, 32% sophomores, and 10.5% juniors. There were no seniors at the university when the study was conducted.

Procedures and Instruments

Before data collection, ethical approval was obtained from the university institutional review board. The researcher arranged the study location in collaboration with the program coordinator of the department. Medical school students received a consent letter, a demographic information and disability background questionnaire, the Medical Students' Attitudes toward People with Disabilities Instrument (Symons et al., 2012), and Turkish Version of the Multidimensional Attitudes toward Persons with Disabilities (Yelpaze & Türküm, 2018). Students' completion of the questionnaire was voluntary and confidential. The written permission for the adaptation of the Medical Students' Attitudes toward People with Disabilities Instrument was obtained from the researchers (Symons et al., 2012) and for the use of the scale (Yelpaze & Türküm, 2018).

Disability Background Questionnaire

Disability Background Questionnaire included questions pertaining to participants' disability status, their interaction with individuals with disabilities, and three open-ended questions about attitudes of medical students about patients with disabilities. Open-ended questions are considered as a way of understanding opinions and attitudes (Fraenkel & Wallen, 2003). The questions asked to medical students were: (1) Do you find difficult to conduct a medical exam on a patient with a disability? If so, why? (2) What information about individuals with disabilities would help you before starting your internship? (3) Which type of disability training do you need before starting your internship?

Medical Students' Attitudes toward People with Disabilities Instrument

The Medical Students' Attitudes toward People with Disabilities Instrument (MSDI), developed by Symons et al. (2012), consists of three parts. The first part includes two close-ended questions regarding personal and professional experience with individuals with disabilities. The second

part includes 18 items on a 4-point Likert scale (from 1 = strongly disagree to 4 = strongly agree) related to attitudes toward individuals with disabilities. The third part includes two clinical scenarios (one scenario with a patient without an apparent disability, other scenario with a patient with an apparent disability). Each scenario was followed by three 4-point Likert scale items related to the comfort level in managing the situation. Only the third part with 4-point Likert-scale items (Item 22, 23, 24, 26, 27, and 28 in the original instrument) was used in this present study.

In developing Turkish version of the T-MSDI, a back-translation technique was used as suggested by Peña (2007), which is common in cross-cultural research. I translated the original English version of the MSDI into target language (Turkish). An independent translator translated the target version back to source language (English) without having seen the original version. The translations were compared and the minor differences between the original version and the translated version were corrected. I worked with the independent translator to ensure the compatibility of the translation. Lastly, a bilingual professor who is familiar with the cultural and educational context of Turkey independently compared the Turkish version with the original version to verify that the T-MSDI was accurate.

Turkish Version of the Multidimensional Attitudes toward Persons with Disabilities (T-MAS)

The MAS originally was developed to measure individuals' attitudes toward people with disabilities by Findler et al. (2007), which has a total of 34 items on a 5-point Likert scale ranging from 1 (not at all) to 5 (very much). The MAS consists of three subscales: Affection (16 items), Cognition (10 items), and Behavior (6 items). The internal reliabilities were .90, .83, and .88 for the Affection, the Cognition, and the Behavior subscales, respectively (Findler et al, 2007). Many researchers adapted the MAS into different languages including Korean (Kim et al., 2015), French (Dachez et al., 2015), and Turkish (Yelpaze & Türküm, 2018). For the adaptation of Turkish version of the MAS, Yelpaze and Türküm (2008) established internal consistency reliability and convergent validity of the scale and employed confirmatory factor analysis. Results indicated the T-MAS has a consistent factor structure with the original scale, except for three items, (Items 15 and 16 in the Affection Subscale, and Item 1 in the Cognition Subscale) accounting for % 49.19 of total variance (Yelpaze & Türküm, 2018). Researchers indicated Cronbach's Alpha at .90, .88, and

.84 for the Affection, the Cognition, and the Behavior subscales, respectively. Overall, Yelpeze and Türküm (2018) indicated the T-MAS has an acceptable reliability and validity.

Data Analysis

The methods utilized for the analysis were as follows: The descriptive statistical analysis included frequency (*f*), percentage (%), mean, and standard deviation. An exploratory factor analysis was employed to examine the underlying structure of the T-MSDI and the T-MAS. A Pearson Moments correlation analysis was employed to examine the correlations between each item and the total score of the T-MSDI and the T-MAS. The Cronbach's alpha was used for reliability analysis. A paired sample t-test was used to examine whether medical students' responses to each scenario were different.

Attitudes of medical students were gathered via a Likert-type questionnaire; thereby, the dependent variable was continuous, and the observations were independent. Skewness and kurtosis were used to test the normality of the data. The skewness and kurtosis between -2 and +2 are acceptable values for normal distribution (George & Mallery, 2010). It was found that medical students' attitudes were normally distributed, with skewness of -.562 (*SE* = .196) and kurtosis of .957 (*SE* = .390) for the T-MSDI and with skewness of -.006 (*SE* = .196) and kurtosis of -.326 (*SE* = .390) for the T-MAS.

With respect to the analysis of open-ended questions, a content analysis was chosen as the methodology to analyze the individual's responses and identify themes. A content analysis can include both numeric and interpretive data analysis (Schwandt, 1997). Results are presented in numeric and interpretative forms in this study. While a description of each theme, in conjunction with representative quotations from participants would provide conceptual interpretation of data, a quantified approach that presents a simple count of each theme would help to gain a sense of how common a particular view is emerged from the data (Seale & Silverman, 2010). Following steps were taken for data analysis: (1) participants' responses to each question were recorded on an Excel spreadsheet, (2) each response was read to become familiar with data, (3) each response was read more thoroughly and simply coded, (4) initial codes of themes were reviewed, multiple coding was performed, and themes were re-identified. To establish reliability and validity, a faculty member experienced in qualitative research recoded the open-ended

questions. The interrater reliability was calculated to be 86%. An interrater agreement of 80% is the acceptable threshold (Miles & Huberman, 1994), thus, present study meets the criterion.

Results

The T-MSDI was used to measure medical students' comfort level about disability. The internal consistency was obtained by employing two methods. First, correlations between each item and total score were calculated. Correlations between six items and the total score ranged from .770 to .814, indicating items were significantly correlated with the total score. Second, the Cronbach's alpha was used as a measure of internal consistency reliability. The Cronbach's alpha was at .89 which can be considered as good. Analysis of corrected item-total correlations indicated all items appeared to be important as shown in Table 1.

Table 1
Corrected item-total correlations

Items	Corrected item-total correlation	Cronbach's alpha if item deleted
1	.661	.870
2	.722	.860
3	.704	.863
4	.693	.865
5	.714	.862
6	.691	.866

N = 153.

An exploratory factor analysis with varimax rotation was used to examine the structure of the T-MSDI. The Kaiser-Meyer-Olkin (KMO) and Bartlett's Test of Sphericity were employed to test the suitability of the data for factor analysis for the six items. A KMO greater than .70 and a statistically significant result of Bartlett's test was used as criteria for exploratory factor analysis (Hair et al., 1998). The KMO was .811 which can be considered as an adequate sample for factor analysis. The Bartlett's Test of Sphericity was .000 indicating exploratory factor analysis was appropriate to use in this study (Hair et al., 1998). Using the "eigenvalues of 1.00 or greater" criterion, the factor analysis accounted for one factor indicating 63.5 % of the total variance for the six items. As in the original instrument, Factor 1 consisted of six items related to working with

individuals with disabilities, which was named as “working” as in the original version of the scale. All of the items were used for data analysis. Factor loadings are shown in Table 2.

Table 2

Factor loadings for the T-MSDI

Items	Factor loadings	Mean	Standard deviation	% of Variance	Cronbach Alpha
1	.771	3.14	.76	63.5	.89
2	.818	3.24	.76		
3	.801	3.20	.73		
4	.792	3.14	.73		
5	.809	3.02	.82		
6	.790	2.99	.83		

$N = 153$.

The mean score of the T-MSDI was 3.12 ($SD = .61$) indicating a positive level of comfort in managing the situation in both scenarios. A paired sample t-test was employed to examine whether medical students’ responses to each scenario differ. The mean score of the first scenario ($M = 3.19$, $SD = .64$) was greater than the mean score of the second scenario ($M = 3.05$, $SD = .67$), $t(152) = 4.02$, $p < .001$. This result suggests that medical students’ comfort levels were more positive toward a patient without apparent disability.

In addition, the T-MAS was used to examine attitudes of medical students toward individuals with disabilities. Correlations between 34 items and the total score ranged from .31 to .59, indicating most of the items were significantly correlated with the total score. There were a few exceptions (Item 16, Item 17, and Item 30); thus, removal of these items were considered. Second, the Cronbach’s alpha was used as a measure of internal consistency reliability. The Cronbach’s alpha was at .87, which can be considered as good. Corrected item-total correlations indicated all items are important. An exploratory factor analysis with varimax rotation was used to analyze the structure of the T-MAS for 31 items. The KMO was .801 which can be considered as an adequate sample for factor analysis. The Bartlett’s Test of Sphericity was .000 indicating exploratory factor analysis was appropriate to use in this study. The factor analysis accounted for three factors indicating 47.30 % of the total variance for the 31 items. As shown in Table 3, all factor loadings were above .40, except for two items (Item 14 and 15). Thus, these two items were removed.

Remaining 29 items were used for data analysis. Factor loadings are shown in Table 2.

Table 3

Factor loadings for the T-MAS

	Items	Factor loading	Mean	Standard deviation	% of Variance	Cronbach Alpha
A f f e c t i o n	A1	.729	2.78	1.13	19.17	.89
	A2	.762	2.74	1.11		
	A3	.716	3.25	1.33		
	A4	.535	4.15	1.26		
	A5	.684	2.59	1.41		
	A6	.669	2.43	1.13		
	A7	.615	2.49	1.27		
	A8	.611	2.80	1.28		
	A9	.562	3.85	1.25		
	A10	.510	3.75	1.26		
	A11	.647	2.73	1.36		
	A12	.698	3.40	1.46		
	A13	.679	3.55	1.41		
C o g n i t i o n	C2	.585	3.96	1.10	17.28	.89
	C3	.700	4.40	.80		
	C4	.727	4.30	.93		
	C5	.721	4.01	1.18		
	C6	.781	4.02	.97		
	C7	.760	4.23	.93		
	C8	.738	4.18	.95		
	C9	.693	4.32	.99		
	C10	.778	4.14	1.05		
	B7	.467	3.60	1.23		
B8	.500	3.76	1.16			
B e h a v i	B1	.718	4.18	1.08	10.57	.84
	B2	.766	4.25	1.02		
	B3	.809	4.00	1.21		
	B5	.751	4.07	1.19		
	B6	.667	4.49	1.04		

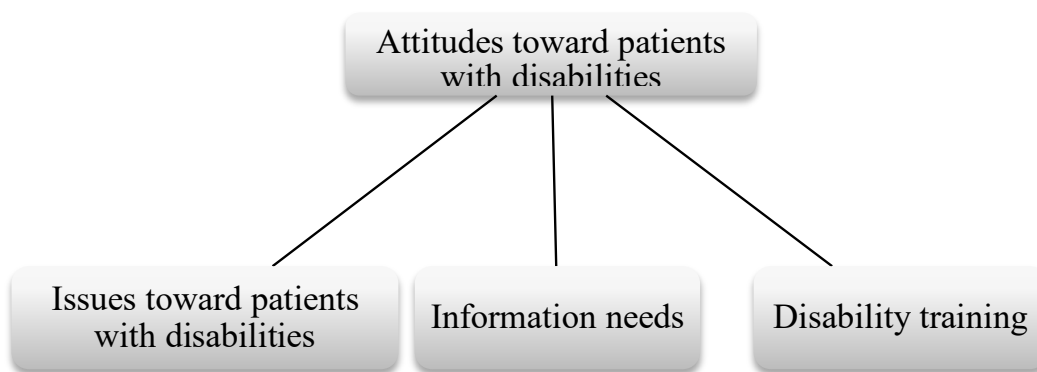
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N = 153.

The mean score of the T-MAS was 3.67 with a standard deviation of .54 indicating positive attitudes toward individuals with disabilities. The mean scores of each factor were 3.11, 4.09, and 4.20 for the Affection, the Cognition, and the Behavior, respectively.

A Pearson correlation analysis was used to examine the association between the T-MSDI and the T-MAS. Results indicated that there was a significant positive correlation between T-MSDI and T-MAS ($r = .276, p < .001$). Further investigation indicated that the relationship between medical students' attitudes and their comfort levels for a patient with apparent disability was slightly higher ($r = .291, p < .001$) than the relationship between their attitudes and their comfort levels for a patient without apparent disability ($r = .225, p < .001$).

Qualitative Data

Three core themes were identified from the analysis of the open-ended questions. It is important to clarify that some of the participants did not respond to the open-ended questions, so the number of participants responding to each open-ended question varied. Content analysis in numeric and interpretative forms with example quotations were presented for each theme and sub-theme below.



Theme 1: Issues toward Patients with Disabilities

Among 153 students, 100 participants (65.4%) opted to “difficult” to conduct a medical exam on a patient with a disability. Only 26 of them responded to the open-ended question about why they found difficult to

perform a medical exam on a patient with a disability. Three sub-themes identified in the analysis of 26 students' responses were "communication issues", "medical issues", and "behavioral and psychological issues". The first sub-theme named as "communication issues" includes students' comments about the probability of communication issues with patients with disabilities ($n = 21$). As one student described, "it is difficult to communicate with them and explain procedures related to their health". The second sub-theme coded as "medical issues" imply students' concerns in taking anamnesis of patients with disabilities ($n = 4$). As one student reported, "it is difficult to understand them, thus, taking anamnesis might be difficult". Lastly, "behavioral and psychological issues" sub-theme emerged from data implies difficulties in managing patients' behaviors, and understanding patients' psychology ($n = 2$). The following quotation illustrated this theme, "it is difficult to manage patients with disabilities behaviors and understand their psychology".

Theme 2: Information Needs

Medical students expressed their needs about individuals with disabilities before starting their intern. Three sub-themes were identified in the analysis of 92 students. These themes were "disability education", "effective communication", and "direct experience". Each sub-theme was presented below.

The first sub-theme named as "disability education" encapsulates the necessity of education about individuals with disabilities, particularly about symptoms and characteristics of certain types of disabilities ($n = 31$). One participant stressed, "I would like to learn the type of disability as well as its characteristics and I need to learn how to approach patients with disabilities". Another participant reported, "I would like to learn what patients with disabilities like or dislike". In addition, one participant noted, "I think it would be more beneficial if disability awareness training is provided for the disabilities that are more prevalent in our country".

The second sub-theme named as "effective communication" captures participants' needs to communicate effectively with individuals with disabilities ($n = 55$). For example, one participant stated, "How to communicate effectively with patients with disabilities? I would like to be informed about the words and behaviors that they are sensitive while communicating". Another participant valued taking a communication skills course. The following quotation also illustrated this sub-theme, "I am not sure about whether we would have much experience with patients

with disabilities, I find it beneficial to take communication skills courses.” One participant highlighted, “If effective communication ways are taught, we would not have any issues to perform medical exam”. Overall, the majority of the participants expressed the importance of effective communication with patients with disabilities.

The third sub-theme named “direct experience” highlights the importance of experience with patients with disabilities ($n = 6$). While most of the participants valued the importance of knowledge about individuals with disabilities in the above paragraph, some of them stressed first-hand experience”. One participant stated, “we need to gain direct experience with patients with disabilities”. Another participant stressed, “not only theoretical information we need but also practical experience”. One participant wrote, “in addition to the clinical experience, an opportunity should have provided us to spend time with people with disabilities in other places, this in turn allows us to gain experience”.

Theme 3: Disability Awareness Training

Medical students expressed training needs in certain types of disabilities before starting their intern. Eight types of disabilities were identified in the analysis of 77 students’ responses. Without any distinction, seven students reported all. For example, one student made a clear statement with respect to his preference about training: “Obviously, I would like to be educated about all types of disabilities, because each type has its own challenges”. Another expressed, “Each disability is unique in itself and we need more information about all of them”. In addition, the majority of the participants indicated intellectual disabilities ($n = 39$). For example, one participant wrote, “I need more information about intellectual disabilities”. Some participants expressed their willingness to receive training about hearing impairments ($n = 14$). One participant highlights the importance of sign language as follows, “In order to facilitate communication with individuals with hearing impairments in clinical settings, I need to learn sign language at least for basic situations”. The other participants simply reported the specific types such as communication disorders ($n = 4$), orthopedic impairment ($n = 6$), visual impairments ($n = 8$), speech and language impairment ($n = 4$). Moreover, students ($n = 2$) mentioned that training should be offered for the most common types of disabilities.

Discussion

This study explored the attitudes of medical students toward individuals with disabilities. Two instruments were used for the study. First, the mean score of the T-MSDI was 3.12 on a 4-point Likert scale indicating well above the average level of comfort in managing situations in two scenarios. It is important to consider that the sample included only medical students who may not have sufficient experience in interacting with patients with disabilities. The lack of experience may lead students to overestimate their comfort levels in the given scenarios. Further examination indicated medical students' comfort levels were less positive toward the situation with the patient with apparent disability. This finding is not surprising as students may have prejudice toward disabilities. Second, the mean score of the T-MAS was 3.67 indicating positive attitudes toward individuals with disabilities. While this score was relatively higher from international context (Findler et al., 2007; Kim et al., 2015), it is consistent with national context (Sahin & Akyol, 2010, Sahin & Gedik, 2020). This finding may be explained by social-cultural perspectives toward disabilities.

Lastly, medical students' comfort levels were positively related with attitudes toward individuals with disabilities. In addition, the relationship between attitudes and comfort levels for a patient with apparent disability was slightly higher than the relationship between attitudes and comfort levels for a patient without apparent disability. This finding is expected and compatible with what literature has indicated (Berry, et al., 1995).

With respect to qualitative analysis, the results imply disability related issues and needs of disability education/training of medical students. During the analysis, it was noticed that the majority of the students did not use person-first language in their responses. For instance, the term "mental retardation" was replaced with "intellectual disabilities" in this study. In addition to the students' acknowledgement in their responses, the lack of person-first language in students' responses proves the necessity of disability education for medical students. Lastly, the majority of the participants acknowledged the necessity of training for certain types of disabilities. The present study clarifies the need of courses designed to introduce individuals with disabilities in medical schools to ameliorate students' attitudes and alleviate their discomfort in communicating and performing medical exam. These results have implications for medical school curriculum.

This study provides practical implications by adaptation of one part of an instrument, T-MSDI. This study also provides theoretical implications by shedding light on medical students' attitudes through qualitative data and exploring the relationship between medical students' attitudes and comfort levels through quantitative data. It is important for medical students to develop positive attitudes toward individuals with disabilities in early years of their education to prevent health inequalities in the society and to increase healthcare-seeking behaviors of individuals with disabilities. For this purpose, future research on interventions aiming to improve medical students' attitudes toward individuals with disabilities should be conducted.

A number of limitations exist in this research. One of the limitations is that the data were obtained from one university in a province of Turkey. The sample was homogeneous in nature, which is leading to limited generalizability of the findings. Future research should be extended to more universities. Additional research should be conducted with medical doctors to provide further evidence to the literature. One of the important limitations of present study was the lack of responses to the open-ended questions. Although a combination of qualitative and quantitative research was used in this study, a qualitative research with semi-structured interview should be a way of unearthing discourses, assumptions, and ideas influencing attitudes and comfort levels toward individuals with disabilities, this in turn yield more comprehensive data.

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