

ORIGINAL ARTICLE

Prevalence of Stigma among medical care providers towards patients with Schizophrenia and Obsessive Compulsive Disorders

Mohamed Osman Elamin¹, Hatim Matoonq Badri^{2*}, Wahaj A. Khan³

¹Department of Health Promotion and Health Education, College of Public Health and Health Informatics, Umm Al-Qura University, Makkah, Saudi Arabia

^{2*}Department of Environmental Health, College of Public Health and Health Informatics, Umm Al-Qura University, Makkah, Saudi Arabia

³Department of Occupational Health, College of Public Health and Health Informatics, Umm Al-Qura University, Makkah, Saudi Arabia

Correspondence: hmbadri@uqu.edu.sa

doi: 10.22442/jlumhs.2023.01040

ABSTRACT

OBJECTIVE: This study aimed to identify the stigma among medical care providers towards people with Schizophrenia and Obsessive-Compulsive Disorder and the factors associated with increased stigma among them.

METHODOLOGY: A cross-sectional study design was used to determine the prevalence of stigma among medical professionals toward patients with Schizophrenia and obsessive-compulsive disorders (OCD). Participants were from one of the best hospitals in Makkah, Saudi Arabia, King Abdullah Medical City (KAMC), in which 283 of their medical care providers were randomly selected using the RAOSOFT calculator technique. All medical care providers at King Abdullah Medical City were included. Medical care providers who refused to participate were excluded. Data entered, cleaned, and analyzed using the Statistical Package for Social Sciences (SPSS) Version 22.

RESULTS: The study clarified that medical care providers have less stigmatization towards patients suffering from OCD (53%) than their stigma towards patients with Schizophrenia (54.4%). The study found that (26.4%), and (1.4%) of physicians felt comfortable dealing with OCD and schizophrenic patients, respectively, while (28.2%) and (11.2%) of nurses felt comfortable dealing with OCD and schizophrenic patients, respectively.

CONCLUSION: The study concluded that the stigma towards patients with Schizophrenia is higher than it is towards patients with OCD; this stigma is higher among physicians than nursing staff.

KEYWORDS: Cross-sectional, Stigma, Schizophrenia, Obsessive-compulsive disorder (OCD), Medical care providers, Medical City.

INTRODUCTION

Mental health disorders are a serious concern. Mental health disorders include a variety of conditions, including things like Schizophrenia and depression. Of course, such disorders can be successfully treated¹. Current statistics indicate that approximately 1 out of 8 or 970 million people globally suffer from mental health disorders². Unfortunately, even though the number of people affected is staggering, social stigma towards mental health conditions and people suffering from it still exists. Current scientific evidence suggests that stigmatization towards mental illness is more prevalent than physical illnesses³. The stigmatizing attitudes and fears shown towards individuals with Schizophrenia are widely prevailing, and this disorder especially appears as one of the most stigmatized mental disorders⁴. Almost 24 million people, or 1 in 300 worldwide, have Schizophrenia⁵. Obsessive Compulsive Disorder (OCD), on the other hand, was found to have a lifetime prevalence of 1.3% globally⁶. Current evidence suggests that people diagnosed with OCD are at risk of developing Schizophrenia+. Stigma is a significant obstacle to OCD patients getting treatment, just like it is for people with Schizophrenia⁸.

Not only can misinformed members of the general population hold stigmatizing beliefs about mental illness, but so can those who work in the medical field and even those who interact with patients⁹. Hence, the unfavorable views of healthcare professionals toward those who are mentally ill may lead to stigma and prejudice, which makes it more difficult for them to get the help they need and to recover from their disease¹⁰. Stigma also affects how health professionals seek treatment and negatively influences their workplace environment¹¹. In Saudi Arabia, stigmatization is widespread; a study found that almost one-fifth of primary healthcare patients have a mental illness¹². Also, an investigation into the stigmatizing attitudes of doctors toward patients with mental disorders was conducted in King Abdullah Medical City (KAMC) in 2019; the investigation results revealed a comparatively high degree of stigmatizing attitude¹³. This study aims to identify the stigma among medical care providers towards Schizophrenia and Obsessive-compulsive disorder people. Our objectives were (i) to examine a variety of the medical care providers' stigma towards people with OCD and Schizophrenia; (ii) to determine the differences in the stigma between medical care providers according to professions; (iii) to identify factors associated with high levels of stigmatization among healthcare providers.

METHODOLOGY

A cross-sectional, descriptive study was conducted in King Abdullah Medical City (KAMC), Makkah, Saudi Arabia, after acquiring ethical clearance (20-742); the sampling method used was a semi-structured interview. Inclusion criteria included healthcare providers with a valid practicing license employed in KAMC, Makkah's branch. Exclusion criteria included those who do not have a valid practicing license, are retired or are on vacation. Before participation, the aim of the study was explained, and verbal consent was obtained before completing the questionnaire. The questionnaire consisted of 2 parts: (i) demographics, which included information on age, gender, the medical profession, years of practice in the clinical industry, financial satisfaction, family history, and place of work; (ii) two medical cases, one describing an individual suffering from Obsessive Compulsive Disorder like symptoms and the other describing an individual suffering from Schizophrenia like symptoms, followed by a set 18 similar questions each that aimed to measure the level of a participant stigma towards each case.

Statistical Analysis:

SPSS software, version 22.0 used for all statistical analysis. In the case of numerical data and depending on each variable's distribution type, mean \pm SD, or median and range, were used. In the case of categorical variables, percentages were used. Regarding comparisons between groups and depending on data distribution and the number of groups to be compared, Student's t-test, ANOVA, Kruskal Wallis test or Mann-Whitney test were used.

RESULTS

A total of 283 participants completed the questionnaires. The majority were males (52.3%, n=148), Saudi (55.8%, n=158), married (60.4%, n=171), income level was between 1000-2000 SR (36.4%, n=103), distributed equally (n=126, 44.5%) for both age groups; 20-30 years and 30-40 years, more than half had rented houses (58.7%, n=166). Of the participants, 218 (77%) reported no personal or family history of mental health issues, 112 had between 5 to 10 years of experience in the clinical industry, 112 were professional nurses (39.6%), and 63 (22.3%) were employed in various medical units.

Results from group comparisons of variables are presented in **Table I**. In summary, the correct answer to the question about the name of diagnosis had the typical response for obsessive-compulsive disorder and Schizophrenia (n=130, 45.9%) and (n=160, 56.5%), respectively.

Based on the suggested cutoffs exhibited in **Table II**, most of the respondents reported were found to be "low" in the overall score of the first case with obsessive-compulsive disorder-like symptoms (53%), mean \pm SD (.360 \pm .161). In contrast, in part 2 overall score, the majority were found to be "high" in schizophrenia symptoms with (54.4%), mean \pm SD (.453 \pm .151).

Characteristics of differences between the number 1 (obsessive-compulsive disorder) and number 2 (Schizophrenia) diagnosis groups regarding demographic data, there were significant differences in medical jobs ($p = .001$) between the obsessive-compulsive disorder and Schizophrenia groups.

Tables III-IV show a comparison between part 1 and part 2 scales. As illustrated in **Table I**, significant associations were detected in the department unit ($p = .048$) and medical job ($p = .004$). The comparison groups did not differ significantly in terms of personal or family history ($p = 0.241$), medical job ($p = 0.584$), gender ($p = 0.398$) or department unit ($p = 0.187$) (**Table IV**).

Table I: Part 1 and Part 2 characteristics

| Variable | OCD (Part 1) Respondents (n= 283) | P value | Schizophrenia (Part 2) Respondents (n= 283) | P value |
|--|--|-------------|--|-------------|
| If you were given a choice between treating this person or treating another person without the symptoms mentioned above, who would you choose? Person with symptoms Person without symptoms | 192 (67.8%) 85 (30%) | .000 | 175 (61.8%) 105 (37.1%) | .000 |
| Would you feel comfortable and safe if you treat this person (whose symptoms were previously mentioned)? Yes No | 195 (68.9%) 87 (30.7%) | .000 | 133 (47%) 146 (51.6%) | .436 |
| Is it safe for you to be alone with this person in a clinic? Yes No | 200 (70.7%) 83 (29.3%) | .000 | 101 (35.7%) 180 (63.6%) | .000 |
| Would you feel afraid if you met this person (outside or inside the clinic) for the first time? No Yes | 213 (75.3%) 69 (24.4%) | .000 | 146 (51.6%) 134 (47.3%) | .473 |
| In your opinion, what is the likelihood that this person's symptoms will improve? Very likely Unlikely | 215 (76%) 63 (22.3%) | .000 | 181 (64%) 98 (34.6%) | .000 |
| In your opinion, does this person have the self-ability to control his symptoms? No Yes | 157 (55.5%) 126 (44.5%) | .065 | 202 (71.4%) 80 (28.3%) | .000 |
| Do you feel that this person is responsible for his actions? No Yes | 161 (56.9%) 121 (42.8%) | .017 | 201 (71%) 79 (27.9%) | .000 |
| After seeing this person and providing your treatment service to him, what | | .311 | | .170 |

ONLINE FIRST

| | | | | |
|---|---|-------------|--|-------------|
| is the possibility that you will tell your colleagues about him and his symptoms? Unlikely Very likely | 149 (52.7%) 132 (46.6%) | | 129 (45.6%) 152 (53.7%) | |
| Is there a possibility that you will be curious to read about this person's symptoms? Yes No | 225 (79.5%) 57 (20.1%) | .000 | 235 (83%) 47 (16.6%) | .000 |
| If this person were female, would your behavior be less fearful then? No Yes | 188 (66.4%) 93 (32.9%) | .000 | 195 (68.9%) 87 (30.7%) | .000 |
| If this person asks to marry you or one of your family members, will you accept him? No Yes | 174 (61.5%) 104 (36.7%) | .000 | 236 (83.4%) 43 (15.2%) | .000 |
| If you wanted to move to a new apartment and knew that this person would be your neighbor, would you refuse to move to it? No Yes | 211 (74.6%) 72 (25.4%) | .000 | 165 (58.3%) 116 (41%) | .003 |
| If your child likes to play with this person's child, will you stop or warn your child? No Yes | 185 (65.4%) 97 (34.3%) | .000 | 147 (51.9%) 134 (47.3%) | .438 |
| What do you think is the diagnosis closest to describing this person's symptoms? Obsessive-compulsive disorder Generalized Anxiety Disorder Schizophrenia Depression | 130 (45.9%) 66 (23.3%) 45 (15.9%) 40 (14.1%) | .000 | 19 (6.7%) 49 (17.3%) 160 (56.5%) 51 (18%) | .000 |
| With any of the aforementioned people, will you be more comfortable interacting? Number 1 (OCD) Number 2 (Schizophrenia) | 223 (78.8%) 56 (19.8%) | .000 | | |

Table II: Comparison between respondents and comfort people

| Variables | Number 1 (OCD) | Number 2 (Schizophrenia) | P value |
|------------------------------------|-------------------|-----------------------------|-------------|
| Gender | | | |
| Female | 106 (38%) | 26 (9%) | .882 |
| Male | 117 (42%) | 30 (11%) | |
| Medical profession | | | |
| Nurse | 78 (28%) | 31 (11%) | .001 |
| Physician | 73 (26%) | 4 (1%) | |
| Technician | 33 (12%) | 13 (5%) | |
| Pharmacist | 6 (2%) | 0 | |
| Physiotherapy | 9 (3%) | 1 (.4%) | |
| Dietitian | 9 (3%) | 0 | |
| Social worker | 1 (.4%) | 1 (.4%) | |
| Respiratory Therapist | 4 (1%) | 1 (.4%) | |
| Other | 8 (3%) | 5 (2%) | |
| Personal or family history: | | | |
| No | 178 (65%) | 36 (13%) | .126 |
| Yes | 31 (11%) | 13 (5%) | |
| I don't know | 12 (4%) | 4 (2%) | |
| Department: | | | |
| Medicine | 51 (19%) | 12 (4%) | .790 |
| Surgery | 32 (12%) | 9 (3%) | |
| Radiology | 21 (8%) | 4 (1%) | |
| ER | 15 (5%) | 3 (1%) | |
| Critical Care Unit | 14 (5%) | 2 (.7%) | |
| OB/GYN | 3 (1%) | 1 (.4%) | |
| Head Neck (ENT) | 7 (2.5%) | 0 | |
| Psychiatry | 2 (.7%) | 0 | |
| Family Medicine | 4 (1%) | 0 | |
| Ophthalmology | 5 (2%) | 1 (.4%) | |
| Physiotherapy | 7 (3%) | 1 (.4%) | |
| Other | 60 (22%) | 22 (8%) | |

Table III: Comparison between respondents and OCD (section 1) diagnosis

| Variables | Low Score | High Score | P value |
|------------------------------------|------------|------------|---------|
| Gender | | | |
| Male | 127 (45%) | 21 (7%) | .410 |
| Female | 111 (39%) | 24 (9%) | |
| Medical Job | | | |
| Nurse | 88 (31%) | 24 (9%) | .011 |
| Physician | 72 (25.6%) | 5 (1.8%) | |
| Technician | 33 (12%) | 14 (5%) | |
| Physiotherapy | 10 (4%) | 0 | |
| Pharmacist | 5 (2%) | 1 (.4%) | |
| Dietitian | 9 (3%) | 0 | |
| Social worker | 2 (.7%) | 0 | |
| Respiratory Therapist | 5 (2%) | 0 | |
| Other | 12 (4%) | 1 (.4%) | |
| Personal or family history: | | | |
| No | 188 (68%) | 30 (11%) | .038 |
| Yes | 36 (13%) | 8 (3%) | |
| I don't know | 10 (4%) | 6 (2%) | |
| Department: | | | |
| Medicine | 56 (20%) | 7 (3%) | .733 |
| Surgery | 36 (13%) | 7 (3%) | |
| Radiology | 21 (8%) | 4 (1%) | |
| ER | 15 (5%) | 3 (1%) | |
| Critical Care Unit | 14 (5%) | 2 (.7%) | |
| Head Neck (ENT) | 8 (3%) | 0 | |
| Physiotherapy | 7 (3%) | 1(.4%) | |
| Ophthalmology | 6 (2%) | 0 | |
| OB/GYN | 3 (1%) | 1 (.4%) | |
| Family Medicine | 3 (1%) | 1 (.4%) | |
| Psychiatry | 2 (.7%) | 0 | |
| Other | 64 (23%) | 19 (7%) | |

Table IV: Comparison between respondents and Schizophrenia (section 2) diagnosis

| Variables | Low Score | High Score | P value |
|------------------------------------|-----------|------------|---------|
| Gender | | | |
| Male | 110 (39%) | 38 (13%) | .962 |
| Female | 100 (35%) | 35 (12%) | |
| Medical Job | | | |
| Nurse | 85 (30%) | 27 (10%) | .415 |
| Physician | 60 (21%) | 17 (6%) | |
| Technician | 32 (11%) | 15 (5%) | |
| Physiotherapy | 9 (3%) | 1 (.4%) | |
| Dietitian | 6 (2%) | 3 (1%) | |
| Pharmacist | 4 (1%) | 2 (.7%) | |
| Social worker | 2 (.7%) | 0 | |
| Respiratory Therapist | 2 (.7%) | 3 (1%) | |
| Other | 8 (3%) | 5 (2%) | |
| Personal or family history: | | | |
| No | 167 (60%) | 51 (18%) | .053 |
| Yes | 31 (11%) | 13 (5%) | |
| I don't know | 8 (3%) | 8 (3%) | |
| Department: | | | |
| Medicine | 45(16%) | 18 (6%) | .431 |
| Surgery | 31 (11%) | 12 (4%) | |
| Radiology | 17 (6%) | 8 (3%) | |
| Critical Care Unit | 15 (5%) | 1 (.4%) | |
| ER | 15 (5%) | 3 (1%) | |
| Physiotherapy | 7 (3%) | 1 (.4%) | |
| Ophthalmology | 6 (2%) | 0 | |
| Head Neck (ENT) | 5 (2%) | 3 (1%) | |
| OB/GYN | 4 (1%) | 0 | |
| Family Medicine | 3 (1%) | 1 (.4%) | |
| Psychiatry | 2 (.7%) | 0 | |
| Other | 58 (21%) | 25 (9%) | |

● **Notes:**

1. A score is the sum of the scores for the part's questions. For items 1, 4, 5, 6, 7, 8, 10, 15, and 16, items are calculated as follows: participant with no symptoms = 1 and participant with symptoms = 0, yes = 1 and no =0, unlikely= 0 and very likely= 1. All other questions (2, 3, 5, 9, and 14) scored reversely: yes = 0 and no =1, unlikely= 1 and very likely= 0.
2. Item 17 (What do you think is the diagnosis closest to describing this person's symptoms?) labelled with 0= OCD for scenario 1, and Schizophrenia for scenario 2. Other values are labelled with=1 for both scenarios.

3. Questions 11, 12, and 13 presented in the flowchart only are:
 - a. If you were a recruiter in an employer, would you employ this person if he possesses the qualifications required for the job?
 - b. Is there a possibility that he will get the promotion he deserves in his job?
 - c. Will this person cause you suspicion if he becomes your colleague at work and in the same department?
4. The scores for each item are summed to produce a single overall score. A high overall score indicates a more (stigmatizing) attitude, and a low overall score indicates a less (stigmatizing).
5. Regarding the combined scores for each part, the cutoff points are below 7 and above 7.
7. Overall scores for both cases are labelled with 1 = low and 2 = high. Group 1 (low) indicates the scores that range from 0 to 7, and group 2 (high) shows the scores that range from 8 to 14.

DISCUSSION

This cross-sectional study was conducted among KAMC medical care providers to examine medical care provider's stigma towards people with obsessive-compulsive disorders and Schizophrenia. The stigma varied between the medical care providers in dealing with people with symptoms and those without, as it has been observed that most medical care providers preferred to deal with patients of OCD and Schizophrenia who show signs. They agreed that patients with OCD were more likely to improve than those with Schizophrenia. The majority rejected any social relations with a person with Schizophrenia, while the refusal rate in OCD was less.

Healthcare providers anywhere in the world are significant contributors to the overall health of their societies. However, they are still a part of that society and their opinions are somehow affected¹⁴. That seems to be the case in Saudi Arabia. A previous study conducted at KAMC, Jeddah's branch, indicated a highly stigmatizing attitude among physicians toward patients with mental illnesses¹³. Also, another study conducted in several hospitals in Riyadh reported finding negative attitudes towards mental health problems among some physicians¹⁵.

Our study revealed that people prefer to hire and promote people with OCD and give them more rewards than those with Schizophrenia. While it is rare for people with Schizophrenia to be accepted, if they are hired, it will be without promotions and upgrades.

These findings are consistent with another study¹⁶, which indicated that people with mental illness are deprived of the chances that constitute a proper, decent life. Even though significant advances have been made in understanding the impact of mental health conditions on individuals and societies, people have only realized the stigma of mental illness. The study of Shrivastava A 2012¹⁷ concluded that medical intervention in psychosis not only protects but can stop and delay the progression of the disease.

Therefore, effective medical interventions are essential in identifying and reducing stigma. Unfortunately, a lack of scientific interest remains towards stigma-related research. One of the critical requirements for the success of early intervention programs is to formulate anti-stigma measures. The lack of awareness alone is not responsible for keeping patients away from treatment; it is the fear of being labelled as mentally ill. Families know that mental illness is an

'illness', but prejudice and shame interfere not only in seeking treatment but also in its continuation¹⁸.

As one of the objectives of the study was to determine the difference in the level of stigma between medical care providers according to professions, unexpectedly, the study revealed that physicians were having the highest level of stigma towards patients with Schizophrenia than patients with OCD, nurses are having the lowest towards both OCD and Schizophrenia patients than physicians.

The study clarified that nurses showed higher stigma towards patients with Schizophrenia than patients with OCD. The result is consistent with another study by Rössler W 2017¹⁹, which clarified that there is an inverse relationship between the personal experience of nurses, like living or knowing a person with mental illness and having stigma. Most nurses were found to have a medium level of stigma towards people with mental illnesses"; nevertheless, they were still showing a good positive attitude towards patients with mental illnesses¹¹.

The healthcare providers of KAMC with no self-complaint or family history of psychiatric illnesses have a higher stigma against patients with Schizophrenia than patients with OCD. The findings are consistent with the study by Rössler W 2017¹⁹, which clarified the same results.

The study clarified that most healthcare providers in KAMC accept to work with an OCD healthcare provider, which means they're less stigmatized towards them. Still, in the case of schizophrenic healthcare providers, the majority refused to work with them, which means that stigma is high towards them; this finding is consistent with another study which clarified that medical care providers with mental illnesses were not accepted to be recruited in health facilities because the quality health service would be affected¹¹.

Without a doubt, stigma is still an issue of great concern and is considered a significant risk factor for mental illness. Hence, addressing the stigma at the individual patient level is vital to achieving high program retention rates.

CONCLUSION

The study concluded that stigma exists among physicians, higher than the less educated staff, and a high level of stigmatizing attitude and ideas among medical care providers against patients with Schizophrenia and OCD existed. However, this stigma is more prominent in patients with Schizophrenia than patients with OCD. Some medical care providers believe that schizophrenia and obsessive-compulsive disorder patients cannot be improved, even by using a medication, and they are not responsible for their actions, which also indicates the stigma. Thus, awareness of the adverse effects of stigma towards the patients with mental disorders among health care providers in overcoming the problem could improve health services directed to them.

Recommendation:

1. Orientation sessions on stigma towards patients with mental illness to the health care providers could decrease these issues and improve the health services to them.
2. To monitor the effect of stigma among medical care providers on the treatment outcomes of patients with mental illness and how these outcomes vary between the different psychiatric diagnoses.
3. Studying how the medical care providers suffering from mental illnesses have been discriminated against in their recruitment or promotion in the medical settings.
4. Training physicians during the internship period on stigma towards mental illness.
5. Revision and modification of nursing mental health educational programs to address stigma-related issues.

Ethical permission: King Abdullah Medical City, Makkah, Saudi Arabia, IRB Letter No. 20-742.

Conflict of interest: The authors declare no conflict of interest.

Funding: This research did not receive specific funding from any financially supporting body.

Data Sharing Statement: The corresponding author can provide the data proving the findings of this study on request. Privacy or ethical restrictions bound us from sharing the data publically.

AUTHOR CONTRIBUTIONS

Elamin MO: The conceptual framework and design of the work, analysis and interpretation of data.

Badri HM: Data collection, curation, drafting the work and revising it critically for important intellectual content.

Khan WA: Resources management, writing the report, Final approval of the version to be published; accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

REFERENCES

1. Organization WH. Mental Health and Substance Use: World Health Organization; 2023. Available from: <https://www.who.int/teams/mental-health-and-substance-use/overview>.
2. Institute of Health Metrics and Evaluation. Global Health Data Exchange (GHDx) 2019. Available from: <https://vizhub.healthdata.org/gbd-results/>.
3. Wogen J, Restrepo MT. Human rights, stigma, and substance use. *Health and Hum Rights*. 2020; 22(1): 51.
4. Valery K-M, Prouteau A. Schizophrenia stigma in mental health professionals and associated factors: A systematic review. *Psychiatry Res*. 2020; 290: 113068. doi: 10.1016/j.psychres.2020.113068. Epub 2020 May 24.
5. Organization WH. Schizophrenia: World Health Organization. 2022. Available from: <https://www.who.int/news-room/fact-sheets/detail/schizophrenia>.
6. Fawcett EJ, Power H, Fawcett JM. Women are at greater risk of OCD than men: a meta-analytic review of OCD prevalence worldwide. *J Clin Psychiatry*. 2020; 81(4): 19r13075. doi: 10.4088/JCP.19r13085.
7. Cheng Y-F, Chen VC-H, Yang Y-H, Chen K-J, Lee Y-C, Lu M-L. Risk of Schizophrenia among people with obsessive-compulsive disorder: A nationwide population-based cohort study. *Schizophr Res*. 2019; 209: 58-63. doi: 10.1016/j.schres.2019.05.024. Epub 2019 May 24.
8. Durna G, Yorulmaz O, Aktaç A. Public stigma of obsessive-compulsive disorder and schizophrenic disorder: Is there really any difference? *Psychiatry Res*. 2019;271: 559-64. doi: 10.1016/j.psychres.2018.12.065. Epub 2018 Dec 10.
9. Batarseh Y, Abukhalaf M, Fakhoury R, Alfalah L, Wazaify M. Mental health literacy and stigma towards patients with mental health disorders among pharmacists in the MENA region. *J Pharmaceut Health Services Res*. 2022; 13(2): 143-50. doi: 10.1093/jphsr/rmac017.
10. Riffel T, Chen S-P. Stigma in healthcare? Exploring the knowledge, attitudes, and behavioural responses of healthcare professionals and students toward individuals with mental illnesses. *Psychiatr Q*. 2020; 91(4): 1103-1119. doi: 10.1007/s11126-020-09809-3.
11. Knaak S, Mantler E, Szeto A, editors. Mental illness-related stigma in healthcare: Barriers to access and care and evidence-based solutions. *Healthcare Management Forum*; 2017: SAGE Publications Sage CA: Los Angeles, CA.
12. Alghadeer SM, Alhossan AM, Al-Arifi MN, Alrabiah ZS, Ali SW, Babelghaith SD et al. Prevalence of mental disorders among patients attending primary health care centers in the capital of Saudi Arabia. *Neurosciences (Riyadh)*. 2018; 23(3): 238-243. doi: 10.17712/nsj.2018.3.20180058.
13. Saad SY, Almatrafi AS, Ali RK, Mansouri YM, Andijani OM. Stigmatizing attitudes of tertiary hospital physicians towards people with mental disorders in Saudi Arabia. *Saudi Med J*. 2019; 40(9): 936-942. doi: 10.15537/smj.2019.9.24510.
14. Napier AD, Ancarno C, Butler B, Calabrese J, Chater A, Chatterjee H et al. Culture and health. *Lancet*. 2014; 384(9954):1607-39. doi: 10.1016/S0140-6736(14)61603-2. Epub 2014 Oct 29.
15. Al-Atram AA. Physicians' knowledge and attitude towards mental health in Saudi Arabia. *Ethiop J Health Sci*. 2018; 28(6): 771-778.

16. Corrigan PW, Watson AC. Understanding the impact of stigma on people with mental illness. *World Psychiatry*. 2002; 1(1): 16-20.
17. Shrivastava A, Johnston M, Bureau Y. Stigma of mental illness-1: Clinical reflections. *Mens Sana Monogr*. 2012; 10(1): 70-84. doi: 10.4103/0973-1229.90181.
18. Ebrahimi H, Namdar H, Vahidi M. Mental illness stigma among nurses in psychiatric wards of teaching hospitals in the north-west of Iran. *Iran J Nurs Midwifery Res*. 2012; 17(7): 534-538.
19. Rössler W. The stigma of mental disorders: A millennia-long history of social exclusion and prejudices. *EMBO Rep*. 2016; 17(9): 1250-3. doi: 10.15252/embr.201643041. Epub 2016 Jul 28.