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Depression, Anxiety, and Aggression Disorders in Patients with Gender Identity Disorder Based on Personality Type: A Cross-Sectional Study

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Abstract

Background: Any deviation from the normal trajectory of gender identity formation creates a basis for incompatibilities, a specific and severe form of which is gender identity disorder (GID). Gender identity disorder affects an individual's development, growth, and overall performance.

Objectives: This study aimed to investigate the prevalence of depression, anxiety, and aggression among individuals with GID, based on their personality type (type A or type B), referred to the Forensic Medicine Department of Ilam city in 2020.

Methods: In this cross-sectional study, all patients diagnosed with GID and referred to the Forensic Medicine Department for gender reassignment were included. All participants received psychological counseling from a psychiatrist. To determine levels of depression, anxiety, personality type, and aggression, Beck's Depression and Anxiety Inventory, the Aggression Questionnaire (AGQ), and Spencer's Type A or B Personality Type Questionnaire were used, respectively. Data were analyzed using *t*-tests, Fisher's exact test, and linear regression through STATA 12 software.

Results: The findings revealed that the mean ± SD total scores for depression and anxiety were 15.2 ± 9.2 and 21.4 ± 13.2, respectively. Among the patients, 21 (52%) exhibited no or very low depressive symptoms, three (8%) had mild symptoms, 12 (30%) had moderate symptoms, and four (10%) had severe depressive symptoms. Regarding anxiety, seven (17.5%) had no or very low symptoms, seven (17.5%) had mild symptoms, 12 (30%) had moderate symptoms, and 14 (35%) had severe symptoms. Among patients with personality types B and A, 11 (64.1%) and 10 (45.5%) individuals, respectively, had no depressive symptoms, while six (33.3%) and one (4.6%), respectively, exhibited no anxiety symptoms. The linear regression model indicated that aggression levels in type A personalities were approximately 6.23 points higher than those in type B personalities (P = 0.03).

Conclusions: Individuals with GID who have a type A personality are more susceptible to mental health disorders compared to those with a type B personality. Additionally, aggression levels in individuals with GID can be partially predicted based on personality type.

Keywords: Depression, Anxiety, Aggression, Gender Disappointment

1. Background

Gender identity disorder (GID) refers to a condition characterized by a clear incongruence between an individual's experienced or expressed gender and their biological gender at birth (1). According to the diagnostic and statistical manual of mental disorders, 5th edition (DSM-V) criteria, this condition must persist for at least six months and be associated with clinical distress or impairment in interpersonal, social, or professional functioning, or with an increased risk of health complications (2, 3). Gender identity disorder can result from abnormal sexual function, a common and treatable issue that significantly impacts individuals' lives and causes emotional tension (4). Broadly, GID signifies dissatisfaction or conflict with one's biological

gender assigned at birth, leading to clinical challenges. From a psychological perspective, it highlights the distinction between sexuality and gender (5).

The prevalence of GID varies across countries, reported as ranging from 1:11,900 to 1:45,000 for male-to-female transsexuals and 1:30,400 to 1:20,000 for female-to-male transsexuals (6). In Iran, the prevalence of GID is estimated at 1.46 per 100,000 individuals (7). Mental and behavioral disorders are particularly common among people with GID (8). According to de Freitas et al., an average of 53.2% of individuals with GID experience at least one mental disorder during their lifetime (9). Studies report rates of depression and anxiety in people with GID ranging from 48% to 62% and 26% to 38%, respectively (8). A study by Meybodi and Jolfaei revealed that the prevalence of personality disorders among individuals with GID is 81.4% (10). Social pressures, frequent rebukes for unexpected behaviors, living with guilt, and emotional suppression are among the significant contributors to comorbidities such as depression, anxiety, and aggression in this population (11, 12). Accurate diagnosis of these psychiatric disorders can provide better insights into GID and improve management strategies (10).

Regarding Iran's cultural context, particularly the traditional culture of Ilam province, individuals suffering from GID may not only be denied recognition as patients but may also have their behaviors interpreted as delinquent or misguided. Furthermore, the social acceptance of the behaviors of individuals with GID is challenging, creating an additional source of anxiety for these individuals and rendering them more vulnerable to personality and psychological problems (13, 14). Gender confusion causes perplexity and disruption in a person's appropriate sexual role and behavior, further deteriorating social and interpersonal relationships and leading to sexual deviance and psychological distress (12). Additionally, many individuals with GID are married, and some have children. For these individuals, gender transformation is often a significant source of anxiety and aggression, frequently culminating in divorce (12, 13).

The prevalence of psychiatric disorders in individuals with GID remains an area of considerable uncertainty, as there is a lack of research exploring the relationship between personality type and the prevalence of psychiatric disorders.

2. Objectives

Given the significance of the issue, this study aimed to determine the prevalence of depression, anxiety, and aggression among individuals with two different personality types (A and B) suffering from GID.

3. Methods

3.1. Participants

This cross-sectional study included all patients (n = 40) who were selected by census and referred to the Forensic Medicine Department of Ilam city in 2020 for gender transformation. The inclusion criteria were: Being 18 years of age or older, having a diagnosis of GID, and being a resident of Ilam. Patients who did not provide informed consent were excluded. All participants received psychological counseling from a trained psychiatrist. The diagnosis of GID was made by a psychiatrist through a clinical interview, and all patient data were collected under the supervision of the psychiatrist.

3.2. Tools

To determine the levels of depression, anxiety, personality type, and aggression, the Beck Depression Inventory-II (BDI-II), Beck Anxiety Inventory (BAI), Aggression Questionnaire (AGQ), and Spencer's A or B Personality Type Questionnaire were used, respectively. Other study variables were then analyzed based on these separate groups. The BDI-II consists of 21 items scored on a 4-point scale ranging from 0 to 3, which evaluate symptoms related to depressive disorders over the past two weeks, with a total score calculated out of 63. Scores of 0 - 13 are considered minimal, 14 - 19 mild, 20 - 28 moderate, and 29 - 63 severe depression (15). The BAI also consists of 21 items, each scored on a 4-point Likert scale from 0 to 3, with scores of 0 - 9 indicating normal levels of anxiety, 10 - 18 mild, 19 - 29 moderate, and 30 - 63 severe anxiety. The AGQ includes 21 items, with each item scored on a 4-point Likert scale from 0 to 3, where higher scores indicate greater levels of aggression. In Spencer's A or B Personality Type Questionnaire, the cut-off score is 13; individuals scoring below this threshold are designated as having a type B personality, while those scoring 13 or higher are categorized as having a type A personality (16). The Persian version of the AGQ has demonstrated test-retest reliability of 0.70 and a Cronbach's alpha of 0.87, ensuring its validity and reliability for this study (17).

3.3. Statistical Analysis

The patients' data were analyzed using the *t*-test, Fisher's exact test, and linear regression with STATA 12 software. The Shapiro-Wilk test was employed to assess

the normality of the data distribution for depression, anxiety, and aggression, with results indicating normal distribution ($P > 0.05$). The adjusted R^2 value was used to identify the best-fit model for the data. Statistical significance was set at $P < 0.05$.

4. Results

Of the study participants, 95% were women, and 5% were men. Ten participants (25%) had academic education, while 25 (75%) had diplomas or lower education levels. The mean ± SD Beck depression scores were 16.23 ± 8.23 for individuals with personality type A and 13.83 ± 10.37 for those with personality type B. The overall mean ± SD depression score was 15.2 ± 9.2, and the mean anxiety score was 21.4 ± 13.2. The mean ± SD Beck anxiety scores were 23.36 ± 13.11 for individuals with type A personality and 13.32 ± 19.00 for those with type B personality. The average aggression score for individuals with type A personality was significantly higher than for those with type B personality (Table 1). Among participants with type B and type A personalities, 11 (64.1%) and 10 (45.5%) individuals, respectively, exhibited no symptoms of depression, while six (33.3%) and one (4.6%) had no anxiety symptoms. Additionally, 22 (55%) of the participants had type A personality, and 18 (45%) had type B personality.

There was no significant difference between the two groups in terms of age or depression symptoms; however, a near-statistically significant difference in anxiety symptoms was observed ($P = 0.06$), with anxiety being slightly more prevalent in individuals with type A personality than in those with type B personality. As shown in Figures 1-3, although aggression, anxiety, and depression scores were higher for type A personality than for type B, the difference between these two personality types diminished with age. However, linear regression analysis revealed a significant relationship between type A personality and aggression. Specifically, aggression levels increased by an average of 6.23 points for individuals with type A personality compared to those with type B personality ($P = 0.03$) (Table 2). No significant relationship was found between personality type and anxiety or depression based on the linear regression model (Table 2) (Figure 1).

5. Discussion

In our study, a higher proportion of participants were classified as having type A personality. Individuals with type A personality tend to exhibit more aggressive behavior in their interactions with others. Although the mean aggression score was low in our sample population, individuals with type A personality demonstrated higher aggression scores compared to those with type B personality, reflecting a greater tendency toward aggressive behavior in this group. Previous studies have established a relationship between anxiety and aggression, indicating that individuals who exhibit higher levels of aggression also tend to experience elevated levels of anxiety. These findings suggest that anxiety may contribute to aggression in these patients, similar to patterns observed in the general population (18, 19). While some studies have dismissed a direct connection between GIDs and aggression, aggression in these patients may stem from factors such as self-destructive behaviors driven by grief, anger, and hopelessness caused by social discrimination, interpersonal relationship challenges, delayed and incorrect diagnoses, and inadequate treatments (19). Previous research has shown that, on average, 53.2% of transgender individuals develop at least one mental disorder during their lifetime (18).

The prevalence of depression in our sample population was 47.5%. Smith et al. (19) reported that transgender women (assigned male at birth) are at high risk of being diagnosed with depression. Similar findings have been observed in transgender men (assigned female at birth) (20). In another study by Heylens et al., the prevalence of mood disorders was reported to be 60% in both transgender men and women (21). A systematic review by Freitas et al. found that 42.1% of transgender individuals suffer from emotional disorders, including depression (9). Weiselberg et al. reported that more than 60% of transgender individuals experience depression (22). Studies have shown that psychological distress in individuals with GIDs is linked to numerous external psychological stressors, such as victimization, harassment, and discrimination (23, 24).

In this study, the mean depression score was higher among individuals with type A personality compared to those with type B personality; however, this difference was not statistically significant. Overall, some degree of anxiety was observed in 82.5% of the participants, with respective rates of 95.5% in individuals with type A personality and 66.6% in those with type B personality. In a study by Heylens et al., the prevalence of anxiety was reported as 28% in their sample population (21), while a systematic review by de Freitas et al. found the prevalence of anxiety disorders to be 26.8% (9).

In the present study, Beck's Anxiety and Depression Inventories were utilized as screening tools to assess anxiety and depression. The high prevalence of these conditions observed in this study may partly reflect the

Table 1. Characteristics of Patients with Gender Identity Disorder Based on Personality Type A or B [a]

Characteristics	Total Sample (N = 40)	Personality Type A (N = 22)	Personality Type B (N = 18)	P-Value
Age (y)	19.5 ± 1.7	19.68 ± 0.3	19.3 ± 0.4	0.45[b]
Gender				0.70[c]
Male	2.0 (5)	1.0 (50)	1.0 (50)	
Female	38 (95)	21 (55)	17 (45)	
Education				0.08[c]
Diploma	30 (75)	14 (47)	16 (53)	
University education	10 (25)	8 (80)	2 (20)	
Depression				0.45[c]
No or very low	21 (52)	10 (48)	11 (52)	
Mild	3 (8)	3 (100)	0 (0)	
Moderate	12 (30)	7 (58)	5 (42)	
Severe	4 (10)	2 (50)	2 (50)	
Anxiety				0.06[c]
No or very low	7 (17.5)	1 (14)	6 (86)	
Mild	7 (17.5)	6 (86)	1 (14)	
Moderate	12 (30)	7 (58)	5 (42)	
Severe	14 (35)	8 (57)	6 (43)	
Aggression	41 ± 10	45 ± 2	36 ± 2	0.01[b]

[a] Values are expressed as No. (%) or mean ± SD.

[b] *t*-test.

[c] Fisher's exact test.

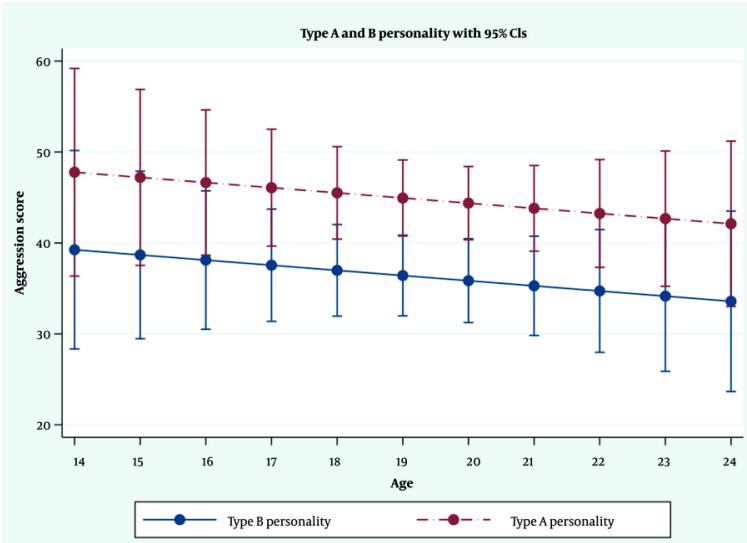

Figure 1. Predicting the score of aggression based on the personality type A or B in patients with a gender identity disorder (GID) using linear regression model

high sensitivity of these instruments. Furthermore, considering that the patients were interviewed during the COVID-19 pandemic, the elevated rates of depression and anxiety may be partially attributable to the psychological impact of the pandemic. However, the findings of this study are not generalizable due to the limited sample size and the lack of broader applicability.

5.1. Conclusions

Gender identity disorder patients with mental health challenges may experience varying frequencies of disorders based on their gender and personality type. A significant difference was observed between individuals with type A and type B personalities in terms of

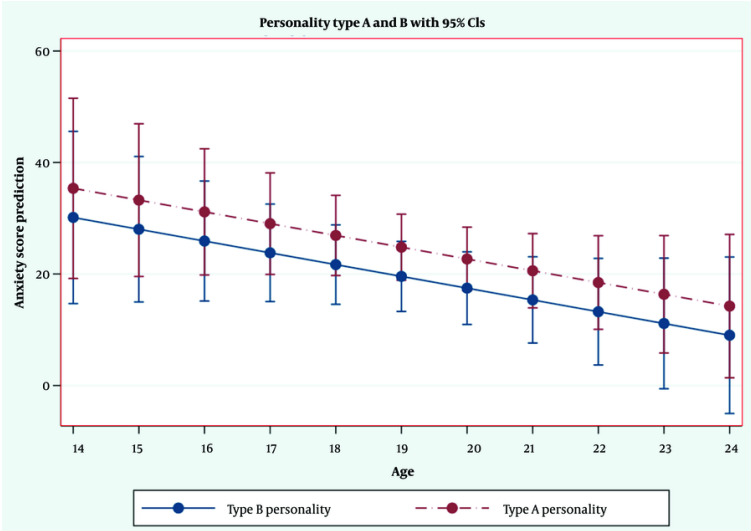

Figure 2. Predicting the score of anxiety based on the personality type A or B in patients with a gender identity disorder (GID) using linear regression model

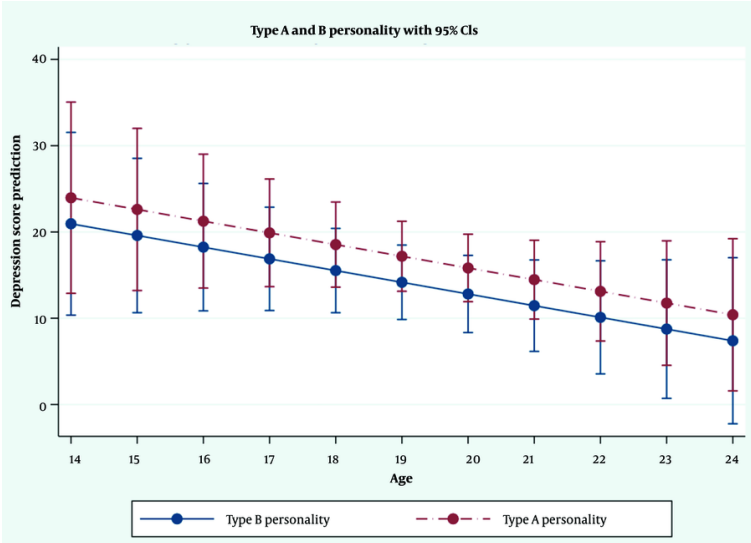

Figure 3. Predicting the score of depression based on the personality type A or B in patients with a gender identity disorder (GID) using linear regression model

aggressive behavior. However, despite the high prevalence of mental health issues, no significant difference was found in depression and anxiety between the two groups. It is essential for GID patients to receive appropriate psychiatric interventions, which may include individual therapy, group therapy, family therapy, and social counseling to address their mental health needs effectively.

Acknowledgements

Table 2. Multivariate Linear Regression Model for the Effect of Personality Type on Depression, Anxiety, and Aggression Scores in Gender Identity Disorder Patients

Variables	Depression		Anxiety		Aggression	
	Regression Coefficient (95%CI)	P-Value	Regression Coefficient (95%CI)	P-Value	Regression Coefficient (95%CI)	P-Value
Personality type						
Type B	1[a]	-	1[a]	-	1[a]	-
Type A	1.23 (-4.47 - 6.93)	0.67	3.11 (-5.43 - 11.64)		6.23 (0.61 - 11.85)	0.03[b]
Model summary [c]	$R^2 = 0.25$; adjusted $R^2 = 0.16$		$R^2 = 0.18$; adjusted $R^2 = 0.10$		$R^2 = 0.36$; adjusted $R^2 = 0.29$	

[a] Reference category.

[b] Significant.

[c] Adjusted model for age, sex, and education.

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Footnotes

Authors' Contribution: Meysam Mohebi and Amin Bakhtiari conceived and designed the evaluation, drafted the manuscript, and participated in designing the evaluation. Aliashraf Mozafari performed parts of the statistical analysis and helped to draft the Manuscript. Iraj Ahmadi, Amir Adibi, and Maryam Kheiry re-evaluated the clinical data, and revised the manuscript. Amin Bakhtiari, Amir Adibi, and Maryam Kheiry collected manuscript. All authors read and approved the final manuscript.

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Data Availability: The associated data could be available by a reasonable request from scientists by sending email to the corresponding author.

Ethical Approval: The Ethical clearance was approved by Ilam University of Medical Sciences Ethics Committee (IR.MEDILAM.REC.1401.103).

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References

1. American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders*. Washington, DC: American Psychiatric Association; 2013. p. 591-643. https://doi.org/10.1176/appi.books.9780890425596.
2. Mehrabi M. *[Desirable Modeling of Open and Distance Universities Textbooks and Comparing It with Payame-noor University Textbooks (dissertation)]*. Tehran: Payame-Noor University; 2012. FA.
3. Fisher AD, Bandini E, Casale H, Ferruccio N, Meriggiola MC, Gualerzi A, et al. Sociodemographic and clinical features of gender identity disorder: an Italian multicentric evaluation. *J Sex Med*. 2013;**10**(2):408-19. [PubMed ID: 23171237]. https://doi.org/10.1111/j.1743-6109.2012.03006.x.
4. Rowland DL, McNabney SM, Mann AR. Sexual Function, Obesity, and Weight Loss in Men and Women. *Sex Med Rev*. 2017;**5**(3):323-38. [PubMed ID: 28456610]. https://doi.org/10.1016/j.sxmr.2017.03.006.
5. Boucher FJO, Chinnah TI. Gender Dysphoria: A Review Investigating the Relationship Between Genetic Influences and Brain Development. *Adolesc Health Med Ther*. 2020;**11**:89-99. [PubMed ID: 32801984]. [PubMed Central ID: PMC7415463]. https://doi.org/10.2147/AHMT.S259168.
6. Hedjazi SA, Talaei A, Badieyan Moosavi N, Fotovat A, Niroumand S. Epidemiological assessment of people with gender dysphoria referred to forensic medicine in Khorasan Razavi, Iran. *J Fundam Mental Health*. 2021;**23**(3):219-24. https://doi.org/10.22038/jfmh.2021.18593.
7. Talaei A, Hedjazi A, Badieyan Moosavi N, Dadgarmoghaddam M, Lotfinejad N, Khorashad BS. The Epidemiology of Gender Dysphoria in Iran: The First Nationwide Study. *Arch Sex Behav*. 2022;**51**(4):1881-9. [PubMed ID: 35511409]. https://doi.org/10.1007/s10508-021-02250-y.
8. Budge SL, Adelson JL, Howard KA. Anxiety and depression in transgender individuals: the roles of transition status, loss, social support, and coping. *J Consult Clin Psychol*. 2013;**81**(3):545-57. [PubMed ID: 23398495]. https://doi.org/10.1037/a0031774.
9. de Freitas LD, Leda-Rego G, Bezerra-Filho S, Miranda-Scippa A. Psychiatric disorders in individuals diagnosed with gender dysphoria: A systematic review. *Psychiatry Clin Neurosci*. 2020;**74**(2):99-104. [PubMed ID: 31642568]. https://doi.org/10.1111/pcn.12947.
10. Meybodi AM, Jolfaei AG. Evaluation of personality disorders in patients with Gender Identity Disorder (GID): An update. *J Family Med Prim Care*. 2022;**11**(6):3196-202. [PubMed ID: 36119335]. [PubMed Central ID: PMC9480747]. https://doi.org/10.4103/jfmpc.jfmpc_1931_21.
11. Cook KJ. *Gender identity disorder: A misunderstood diagnosis [master's thesis]*. Huntington, WV: Marshall University; 2004.
12. Dhejne C, Van Vlerken R, Heylens G, Arcelus J. Mental health and gender dysphoria: A review of the literature. *Int Rev Psychiatry*.

2016;**28**(1):44–57. https://doi.org/10.3109/09540261.2015.1115753.

13. Noorian N, Dolatshahi B, Rezaei O. [Investigation of Personality Disordes and Personality Traits in Men with Gender Identity Disorder]. *Arch Rehabil*. 2008;**9**(1):55-60. FA.
14. Atkinson SR, Russell D. Gender dysphoria. *Aust Fam Physician*. 2015;**44**(11):792-6. [PubMed ID: 26590617].
15. Nakhostin-Ansari A, Sherafati A, Aghajani F, Khonji MS, Aghajani R, Shahmansouri N. Depression and Anxiety among Iranian Medical Students during COVID-19 Pandemic. *Iran J Psychiatry*. 2020;**15**(3):228-35. [PubMed ID: 33193771]. [PubMed Central ID: PMC7603582]. https://doi.org/10.18502/ijps.v15i3.3815.
16. Yusefi A, Jabbari A, Koushki J, Heidari A. [The relationship between personality type and leadership style of managers in educational hospitals of Shiraz University of Medical Sciences]. *Health Dev J*. 2014;**3**(1):84-93. FA.
17. Zahedifar S, Najarian B, Shokrkon H. [Construction and Validation of a Scale for the Measurement of Aggression]. *Psychol Achieve*. 2000;**7**(1):73-102. FA. https://doi.org/10.22055/psy.1999.16450.
18. Dyachenko AV, Perekhov AY, Soldatkin VA, Bukhanovskaya OA. Gender Identity Disorders: Current Medical and Social Paradigm and the ICD-11 Innovations. *Consort Psychiatr*. 2021;**2**(2):54-61. [PubMed ID: 39070730]. [PubMed Central ID: PMC11272310]. https://doi.org/10.17816/CP68.
19. Smith E, Jones T, Ward R, Dixon J, Mitchell A, Hillier L. *From blues to rainbows: the mental health and wellbeing of gender diverse and transgender young people in Australia*. Melbourne: Australian Research Centre in Sex Health and Society; 2014.
20. Bolger A, Jones T, Dunstan D, Lykins A. Australian Trans Men: Development, Sexuality, and Mental Health. *Aust Psychol*. 2014;**49**(6):395-402. https://doi.org/10.1111/ap.12094.
21. Heylens G, Elaut E, Kreukels BP, Paap MC, Cerwenka S, Richter-Appelt H, et al. Psychiatric characteristics in transsexual individuals: multicentre study in four European countries. *Br J Psychiatry*. 2014;**204**(2):151-6. [PubMed ID: 23869030]. https://doi.org/10.1192/bjp.bp.112.121954.
22. Weiselberg EC, Shadianloo S, Fisher M. Overview of care for transgender children and youth. *Curr Probl Pediatr Adolesc Health Care*. 2019;**49**(9):100682. [PubMed ID: 31706835]. https://doi.org/10.1016/j.cppeds.2019.100682.
23. Rood BA, Puckett JA, Pantalone DW, Bradford JB. Predictors of Suicidal Ideation in a Statewide Sample of Transgender Individuals. *LGBT Health*. 2015;**2**(3):270-5. [PubMed ID: 26788676]. [PubMed Central ID: PMC4713016]. https://doi.org/10.1089/lgbt.2013.0048.
24. Russell ST, Fish JN. Mental Health in Lesbian, Gay, Bisexual, and Transgender (LGBT) Youth. *Annu Rev Clin Psychol*. 2016;**12**:465-87. [PubMed ID: 26772206]. [PubMed Central ID: PMC4887282]. https://doi.org/10.1146/annurev-clinpsy-021815-093153.