UDK 616.895.4-056.83
613.81
COBISS.SR-ID 16466185

FAKTORI KOJI UTIČU NA RAZVOJ DEPRESIJE KOD OSOBA KOJE KONZUMIRAJU ALKOHOL

Marijana C. Jandrić-Kočič

DOM ZDRAVLJA KRUPA NA UNI

Sažetak: Uvod: Oko 90% ljudi u nekom periodu svog života konzumira alkohol. Kod 5-10% istih dolazi do zloupotrebe alkohola, dok ovisnost razvija 10% muškaraca i 3-5% žena. Konzumiranje alkohola može indukovati nastanak depresije ili doprinjeti njenoj ozbiljnosti. Cilj: Istraživanje je imalo za cilj ispitati postojanje statistički značajne povezanosti obrasca pijenja alkohola, dužine trajanja upotrebe alkohola i sociodemografskih faktora sa prisustvom depresije kod osoba koje konzumiraju alkohol. Materijal i metode: Studijom presjeka bilo je obuhvaćeno 100 osoba, 25,0% žena i 75,0% muškaraca, prosječne starosti $53,0 \pm 1,5$ godina, koje konzumiraju alkohol u periodu od osam mjeseci, od 01.10.2018. do 01.06.2019. godine, u okviru Doma zdravlja Krupa na Uni. Pored opšteg upitnika korišteni su Test za identifikaciju poremećaja uzrokovanih alkoholom (engl. Alcohol Use Disorders Identification Test, AUDIT) i Bekov indikator depresije (engl. Beck's Depression Inventory, BDI). Rezultati: Ispitanici sa štetnim pijenjem imali su statistički značajno češće prisustvo depresije u odnosu na ispitanike sa drugim obrascima pijenja alkohola ($p < 0.05$). Nije postojala statistički značajna razlika u prisustvu depresije u odnosu na dužinu trajanja upotrebe alkohola ($p = 0.09$) i pola ispitanika koji konzumiraju alkohol ($p = 0.07$). Ispitanici starosti 40-59 godina sa završenom srednjom školom koji konzumiraju alkohol imali su statistički značajno češće prisustvo depresije u odnosu na ispitanike drugih dobni skupina i stepena obrazovanja ($p < 0.05$). Zaključak: Istraživanje je potvrdilo značajnu ulogu šetnog pijenja alkohola, uzrasta i stepena obrazovanja u razvoju depresije kod osoba koje konzumiraju alkohol.

Ključne riječi: alkohol, zloupotreba, mentalno, zdravlje, depresija

UVOD

Konzumiranje alkohola predstavlja društveno prihvatljivu aktivnost u zemljama zapadne Evrope. Na našim prostorima favorizovano je do nivoa obaveznog rituala u mnogim društvenim situacijama. Smatra se da oko 90% ljudi u nekom periodu svog života konzumira alkohol. Kod 5-10% istih dolazi do zloupotrebe alkohola, dok ovisnost razvija 10% muškaraca i 3-5% žena [1,2,3]. Konzumiranje alkohola može indukovati nastanak depresije ili doprinjeti njenoj ozbiljnosti kroz nekoliko potencijalnih mehanizama. Umjerene doze alkohola smanjuju koncentraciju triptofana, homovalinske kiseline, γ - amino buterne kiseline, N-metil-D aspartat-endogenih opoida. Njegova upotreba ima negativan uticaj na kognitivne funkcije, doprinosi osjećaju niže vrijednosti, krivice i beznađa, narušava međuljudske odnose, indukuje delinkvenciju [4]. Primarni depresivni poremećaj kod osoba koje konzumiraju alkohol prethodi alkoholnoj intoksikaciji i/ili alkoholnom povlačenju, ili se javlja četiri nedelje od prestanka konzumiranja alkohola. Između ta

dva perioda može da postoji samo alkoholom indukovana depresija koja se smatra posljedicom sindroma apstinencije i prolazi spontano. Depresija koja se održava i nakon četiri nedelje apstinencije smatra se sekundarnom [5].

CILJ

Istraživanje je imalo za cilj ispitati: 1) postojanje statistički značajne povezanosti obrasca pijenja alkohola sa prisustvom depresije kod osoba koje konzumiraju alkohol; 2) postojanje statistički značajne povezanosti dužine trajanja upotrebe alkohola sa prisustvom depresije kod osoba koje konzumiraju alkohol; 3) postojanje statistički značajne povezanosti socio-demografskih faktora sa prisustvom depresije kod osoba koje konzumiraju alkohol.

MATERIJAL I METODE

Studijom presjeka bilo je obuhvaćeno 100 osoba koje konzumiraju alkohol u periodu od osam mjeseci, od 01.10.2018. do 01.06.2019. godine, u okviru Doma zdravlja Krupa na Uni. Kriterijumi

za uključivanje ispitanika u istraživanje su bili: uzrast između 20 i 79 godina, završena osnovna škola i anamnestički podatak o konzumiranju alkohola u trajanju od najmanje dvanaest mjeseci. Iz studije su isključene osobe: starosti iznad 79 i ispod 20 godina sa konzumiranjem alkohola u trajanju kraćem od dvanaest mjeseci, kao i sve osobe sa malignim i uznapredovalim hroničnim oboljenjima (hronična bubrežna insuficijencija, dekompenzacija srca, insuficijencija jetre). Podaci su prikupljeni opštim i specifičnim upitnicima. Opštim upitnikom prikupljeni su sociodemografski podaci (pol, uzrast, stepen obrazovanja).

Bekov indikator depresije (engl. Beck's Depression Inventory, BDI) se koristi kao sredstvo za registrovanje postojanja i intenziteta depresivnih simptoma koji su u saglasnosti sa aktuelnim Dijagnostičkim i statističkim priručnikom za mentalne poremećaje (engl. Diagnostic and Statistical Manual, DSM). Danas je u upotrebi druga revidirana verzija preporučena od strane Američke asocijacije psihijatarata (engl. American Psychiatric Association's, APA). Sastoji se od 21 izjave (svaki izjava je lista od četiri navoda rangiranih prema intenzitetu određenog simptoma depresije) koju bodujemo ocjenom od 0 do 3. Ukupan zbir od 0 do 13 isključuje postojanje depresije. Rezultati u intervalu od 14 do 19 govore u prilog blage depresije. Kod zbira od 20-28 postoji umjerena depresija. Teška depresija je prisutna kod pacijenata koji imaju skor 29-63 [6,7]. Test za identifikaciju poremećaja uzrokovanih alkoholom (engl. Alcohol Use Disorders Identification Test, AUDIT) je namjenjen za ranu identifikaciju rizičnog i štetnog pijenja kao i

zavisnosti od alkohola, razvijen i preporučen od Svjetske zdravstvene organizacije (engl. World Health Organization, WHO). Test se sastoji od tri pitanja iz oblasti rizične upotrebe alkohola (učestalost pijenja, tipična količina, učestalost teškog pijenja), tri pitanja koja obuhvataju simptome zavisnosti (umanjena kontrola nad pijenjem, povećana želja za pijenjem, jutarnje pijenje) i četiri pitanja iz oblasti štetne upotrebe alkohola (krivica poslije pijenja, amnezija, povrede usljed konzumacije alkohola, zabrinutost okoline) koja bodujemo ocjenom 0-4. Skor 0-7 govori u prilog niskorizičnog pijenja. Rezultat u intervalu 8-15 odgovara rizičnom pijenju. Štetno pijenje je prisutno kod ispitanika sa skorom 16-19. Zbir 20-40 otkriva zloupotrebu alkohola [1, 8]. Za analizu podataka korišćene su deskriptivne statističke metode: distribucija frekvencije obilježja, aritmetička sredina, standardna devijacija i procenti. Za utvrđivanje statističke značajnosti korišten je χ^2 -test nezavisnosti. Nivo značajnosti je podešen na 95% interval povjerenja. Rezultati su prikazani tekstualno, tabelarno i grafički, a kompletan rad je obrađen u tekst procesoru Microsoft Word for Windows.

REZULTATI

Istraživanje je obuhvatilo 100 pacijenata. Među njima je bilo 25,0% žena i 75,0% muškaraca. Najveći broj ispitanika koji konzumiraju alkohol (58%) su životne dobi 40-59 godina. Prosječna starost ispitivane populacije bila je $53,0 \pm 1,5$ godina. Žene su bile statistički značajno starije nego muškarci. Završenu osnovnu školu imalo je 22% ispitanika, fakultetsko obrazovanje njih 2%. Srednju školu je završilo 76% ispitanika.

Tabela 1. Distribucija osoba koje konzumiraju alkohol prema polu, uzrastu i stepenu obrazovanja

Uzrast (godine)	Muškarci Broj (%)	Žene Broj (%)	Ukupno Broj (%)
20-39	10 (10,0%)	0 (0,0%)	10 (10,0%)
40-59	58 (58,0%)	16 (16,0%)	74 (74,0%)
60-79	7 (7,0%)	9 (9,0%)	16 (16,0%)
Ukupno	75 (75,0%)	25 (25,0%)	100 (100,0%)
Stepen obrazovanja	Muškarci Broj (%)	Žene Broj (%)	Ukupno Broj (%)
Osnovna škola	12 (12,0%)	10 (10,0%)	22 (22,0%)
Srednja škola	61 (61,0%)	15 (15,0%)	76 (76,0%)
Fakultet	2 (2,0%)	0 (0,0%)	2 (2,0%)
Ukupno	75 (75,0%)	25 (25,0%)	100 (100,0%)

Najveći broj učesnika u istraživanju (69%) konzumirao je alkohol u trajanju između 20-30

godina. Drugi po učestalosti bili su ispitanici (19%) koji konzumiraju alkohol u trajanju

između 10-20 godina. Najmanji broj učesnika u istraživanju (12%) konzumirao je alkohol u

trajanju između 1-10 godina.

**Grafikon 1. Dužina konzumiranja alkohola u godinama kod ispitanika
N = 100**

Kod najvećeg broj ispitanika (49%) utvrđeno je rizično pijenje. Niskorizično pijenje verifikovano je kod 35% ispitanika, štetno pijenje kod njih 13%. Najmanji broj ispitanika je zloupotrebjavao alkohol (3%). Osobe muškog

pola, starosti 40-59 godina sa završenom srednjom školom, kao i osobe koje konzumiraju alkohol 20-30 godina imale su statistički značajno viši procenat rizičnog i štetnog pijenja kao i zavisnosti od alkohola.

Tabela 2. Distribucija pola, uzrasta i stepena obrazovanja osoba koje konzumiraju alkohol u prema AUDIT (testu za identifikaciju poremećaja uzrokovanih alkoholom)

Karakteristike		Zbir 0-7 **	Zbir 8-15***	Zbir 16-19****	Zbir ≥ 20*****	p vrijednost*
Pol	Muškarci	19 (25,3%)	43 (57,4%)	10 (13,3%)	3 (4,0%)	NS, 0.07
	Žene	16 (64,0%)	6 (24,0%)	3 (12,0%)	0 (0,0%)	
Uzrast u godinama	20-39 godina	1 (10,0%)	7 (70,0%)	2 (20,0%)	0 (0,0%)	< 0.05
	40-59 godina	20 (27,0%)	40 (54,1%)	11 (14,9%)	3 (4,0%)	
	60-79 godina	14 (87,5%)	2 (12,5%)	0 (0,0%)	0 (0,0%)	
Stepen obrazovanja	Osnovna škola	13 (59,1%)	6 (27,3%)	3 (13,6%)	0 (0,0%)	< 0.05
	Srednja škola	22 (28,9%)	41 (53,9%)	10 (13,2%)	3 (4,0%)	
	Fakultet	0 (0,0%)	2 (100,0%)	0 (0,0%)	0 (0,0%)	
Dužina konzumiranja alkohola u godinama	1-10 godina	1 (8,3%)	10 (83,4%)	1 (8,3%)	0 (0,0%)	< 0.05
	10-20 godina	10 (52,6%)	9 (47,4%)	0 (0,0%)	0 (0,0%)	
	20-30 godina	24 (34,8%)	30 (43,4%)	12 (17,4%)	3 (4,3%)	

LEGENDA: *Prema hi kvadrat testu ili Fisher-ovom testu; **Niskorizično pijenje; ***Rizično pijenje; ****Štetno pijenje; ***** Zloupotreba alkohola.

Depresija je utvrđena kod 42 (46,0%) muškarca i 15 (60,0%) žena. Umjerene depresivne tegobe imalo je 6 (8,0%) muškarca i 8 (32,0%) žena. Ozbiljne depresivne tegobe verifikovane su kod 3 (4,0%) muškarca i 1 (4,0%) žene. Istraživanje nije moglo detektovati postojanje statistički značajne razlike u prisustvu depresije u odnosu

na pol ispitanika koji konzumiraju alkohol ($p = 0.07$). Depresija je bila prisutna kod 4 (40,0%) ispitanika starosti 20-39 godina, 49 (66,2%) ispitanika starosti 40-59 godina i 4 (25,0%) ispitanika starosti 60-79 godina. Umjerene depresivne tegobe imao je 1 (10,0%) ispitanik starosti 20-39 godina, 12 (16,2%) ispitanika

starosti 40-59 godina i 1 (6,2%) ispitanik starosti 60-79 godina. Ozbiljne depresivne tegobe utvrđene su kod 4 (5,4%) osobe starosti 40-59 godina. Ispitanici starosti 40-59 godina koji konzumiraju alkohol imali su statistički značajno češće prisustvo depresije u odnosu na ispitanike drugih dobnih skupina ($p < 0.05$). Depresivne tegobe je imalo 12 (44,5%) ispitanika sa završenom osnovnom školom i 43 (46,6%) ispitanika sa završenom srednjom školom. Umjerene depresivne tegobe utvrđene su kod 3 (13,6%) ispitanika sa završenom osnovnom školom i 11 (14,5%) ispitanika sa završenom srednjom školom. Ozbiljne depresivne tegobe verifikovane su kod 4 (5,3%) ispitanika sa završenom srednjom školom. Učesnici u istraživanju koji konzumiraju alkohol sa završenom srednjom školom imali su statistički značajno češće prisustvo depresije u odnosu na ispitanike drugih stepena obrazovanja ($p < 0.05$). Depesija je utvrđena kod 8 (66,7%) ispitanika koji konzumiraju alkohol 1-10 godina, 14 (95,0%) ispitanika koje konzumiraju alkohol 10-20 godina i 35 (50,7%) ispitanika koji konzumiraju alkohol 20-30

godina. Umjerene depresive tegobe imala su 3 (25,0%) ispitanika koji konzumiraju alkohol 1-10 godina, 7 (7,0%) ispitanika koji konzumiraju alkohol 10-20 godina i 4 (5,8%) ispitanika koji konzumiraju alkohol 20-30 godina. Ozbiljne depresivne tegobe verifikovane su kod 4 (4,0%) ispitanika koji konzumiraju alkohol 10-20 godina. Nije postojala statistički značajna razlika u prisustvu depresije kod ispitanika koji piju alkohol u odnosu na dužinu trajanja konzumiranja alkohola ($p = 0.09$).

Depresija je verifikovana kod 13 (37,1%) ispitanika sa niskorizičnim pijenjem, 28 (47,1%) ispitanika sa rizičnim pijenjem i svih (100%) ispitanik asa štenim pijenjem i zloupotrebom alkohola. Umjerene depresivne tegobe imala su 4 (8,2%) ispitanika sa rizičnim pijenjem i 10 (76,9%) ispitanika sa štenim pijenjem. Ozbiljne depresivne tegobe utvrđene su kod 1 (7,7%) ispitanika sa štetnim pijenjem i 3 ispitanika sa zloupotrebom alkohola. Ispitanici sa štetnim pijenjem imali su statistički značajno češće prisustvo depresije u odnosu na ispitanike sa drugim obrascima pijenja ($p < 0.05$).

Tabela 3. Distribucija sociodemografskih karakteristika, dužine trajanja konzumiranja alkohola i obrasca pijenja osoba koje konzumiraju alkoholu u prema BDI (Bekov indikator depresije)

Karakteristike		Zbir 0-13 **	Zbir 14-19***	Zbir 20-28****	Zbir ≥ 29*****	p vrijednost*
Pol	Muškarci	33 (44,0%)	33 (44,0%)	6 (8,0%)	3 (4,0%)	NS, 0.07
	Žene	10 (40,0%)	6 (24,0%)	8 (32,0%)	1 (4,0%)	
Uzrast u godinama	20-39 godina	6 (60,0%)	3 (30,0%)	1 (10,0%)	0 (0,0%)	< 0.05
	40-59 godina	25 (33,8%)	33 (44,6%)	12 (16,2%)	4 (5,4%)	
	60-79 godina	12 (75,0%)	3 (18,8%)	1 (6,2%)	0 (0,0%)	
Stepen obrazovanja	Osnovna škola	10 (45,5%)	9 (40,9%)	3 (13,6%)	0 (0,0%)	< 0.05
	Srednja škola	33 (43,4%)	28 (36,8%)	11 (14,5%)	4 (5,3%)	
	Fakultet	0 (0,0%)	2 (100,0%)	0 (0,0%)	0 (0,0%)	
Dužina konzumiranja alkohola u godinama	1-10 godina	4 (33,3%)	5 (41,7%)	3 (25,0%)	0 (0,0%)	NS, 0.09
	10-20 godina	5 (5,0%)	3 (3,0%)	7 (7,0%)	4 (4,0%)	
	20-30 godina	34 (49,3%)	31 (44,9%)	4 (5,8%)	0 (0,0%)	
Obrazac pijenja alkohola	Niskorizično pijenje	22 (62,9%)	13 (37,1%)	0 (0,0%)	0 (0,0%)	< 0.05
	Rizično pijenje	21 (42,9%)	24 (49,0%)	4 (8,2%)	0 (0,0%)	
	Štetno pijenje	0 (0,0%)	2 (15,4%)	10 (76,9%)	1 (7,7%)	
	Zloupotreba alkohola	0 (0,0%)	0 (0,0%)	0 (0,0%)	3	

LEGENDA: *Prema hi kvadrat testu ili Fisher-ovom testu; **Odustvo depresivnih tegoba; ***Blago izdružene depresivne tegobe; ****Umjerene depresivne tegobe; *****Ozbiljne depresivne tegobe;

DISKUSIJA

Istraživanje je utvrdilo postojanje depresije kod 64% osoba koje konzumiraju alkohol (39% blaga depresija, 14% umjerena depresija i 4% ozbiljna depresija). U istraživanju grupe autora iz Kenije sekundarna depresija bila je prisutna kod 68,3% osoba koje konzumiraju alkohol [9]. Istraživanja provedena u Engleskoj verifikovala su postojanje umjerene depresije u 47% osoba sa dijagnozom alkoholizma. Ozbiljne depresivne tegobe imalo je 34% osoba koje konzumiraju alkohol [1]. Istraživanje grupe autora u Nepal u utvrdilo je postojanje depresije kod 41,7% osoba hospitalizovanih zbog zloupotrebe alkohola [10]. Istraživanje nije verifikovalo statistički značajnu razliku u prisustvu depresije u odnosu na pol ispitanika koji konzumiraju alkohol. Istraživanja grupe autora iz Nizozemske došla su do zaključka da osobe ženskog pola koje konzumiraju alkohol imaju statistički značajno veći rizik od sekundarne depresije [11]. Istraživanja grupe autora u Tajvanu i Sjedinjenim Američkim državama utvrdila su snažnu povezanost upotrebe alkohola i depresije kod učenika viših razreda osnovne škole. Upotreba alkohola u ranom adolescentnom periodu rezultuje promjenama u frontalnom i limbičkom korteksu odgovornim za afektivna oštećenja [12,13]. Studije provedene u Rusiji utvrdile su da je konzumiranje alkohola kod osoba ženskog pola povezano sa bržim razvojem depresije u odnosu na muškarce. Kao mogući razlog navodi se činjenica da žene razvijaju veću koncentraciju alkohola u krvi od muškaraca nakon što piju ekvivalentne količine alkohola po kilogramu tjelesne mase [14,15]. Osim toga žene imaju veći rizik od razvoja depresije kao posljedice rodni razlika u ulogama u savremenom društvu [16]. Životna dob 40-59 godina bila je povezana sa statistički značajno češćim prisustvom depresije kod osoba koje konzumiraju alkohol. U navedenom životnom dobu može doći do pojačane konzumacije alkohola u pokušaju da se savladaju rastući socioekonomski problemi. Istraživanja grupe američkih autora ukazuju da osobe koje počinu konzumirati alkohol u starijem odraslom dobu imaju statistički značajno veću mogućnost nastanka depresije od njihovih vršnjaka koji ne piju [4]. Učesnici u istraživanju sa srednjom stručnom spremom koji konzumiraju alkohol

imali su statistički značajno češće prisustvo depresije u odnosu na ispitanike sa završenom osnovnom školom i fakultetski obrazovane osobe. Češće prisustvo depresije se može objasniti značajno češćom pojavom štetnog pijenja i zloupotrebe alkohola kod istih. Dužina konzumiranja alkohola nije statistički značajno uticala na razvoj depresije. Studije ukazuju da upotreba alkohola dosta rano dovodi do razvoja depresije. Istraživanja u Sjedinjenim Američkim Državama ukazuju da preko 28% osoba koji konzumiraju alkohol imaju razvijenu depresiju do 30. godine života [17]. Obrazac konzumacije alkohola je u tijesnoj vezi sa nastankom depresije kod učesnika u istraživanju. Istraživanje grupe američkih autora ukazuju da muškarci koji piju 14-27 alkoholnih pića sedmično i žene koje piju 7-13 alkoholnih pića sedmično imaju statistički značajno veće prisustvo depresije u odnosu na one koji piju manje količine alkohola [3]. Istraživanja provedena u Singapuru utvrdila su alkoholnu ovisnost kao nezavisni prediktivni faktor razvoja depresivnih tegoba kod osoba ženskog pola [18]. Istraživanja provedeno u Australiji utvrdilo je statistički značajnu povezanost zloupotrebe alkohola i razvoja depresije kod mladih žena [19,20]. Studija provedena u Kini utvrdila je da niskorizično pijenje značajno smanjuje rizik od nastanka depresije kod pripadnika oba pola [21]. Istraživanje grupe američkih autora detektovala su značajno manje depresivnih tegoba kod starijih osoba sa niskorizičnom konzumacijom alkohola (navedeno su imali statistički značajno nižu koncentraciju C reaktivnog proteina) [22]. Istraživanja grupe autora u Španiji nisu utvrdila protektivni učinak umjerene konzumacije alkohola na razvoj depresije kod starijih osoba [23].

ZAKLJUČAK

Štetno pijenje alkohola je snažan prediktor prisustva depresije. Dužina trajanja upotrebe alkohola nije bila statistički značajno povezana sa prisustvom depresije. Ne postoji statistički značajna razlika u prisustvu depresije u odnosu na pol osoba koji konzumiraju alkohol. Životna dob 40-59 godina i srednja stručna sprema bili su povezani sa prisustvom depresije kod osoba koje konzumiraju alkohol.

LITERATURA:

1. Republička stručna komisija za izradu i implementaciju vodiča dobre kliničke prakse. Nacionalni vodič dobre kliničke prakse Alkoholizam. Ministarstvo zdravlja Republike Srbije. 2013. Available from: <http://www.batut.org.rs/download/nacionalni%20vodi%20dicZaDijagnostikovanjeIlečenjeAlkoholizma.pdf>.
2. Sher L. Depression and alcoholism. QJM: An International Journal of Medicine. 2004; 97 (4): 237–240. Available from: <https://doi.org/10.1093/qjmed/hch04>
3. Toornstra A, Massar K, Hurks PPM, Timmermans MMMS, Kok G, Curfs LMG. Perceptions of Alcohol and Alcohol Use among Community Members and Young Adults in Ukraine. Substance Use & Misuse. 2020. Available from: <https://www.tandfonline.com/doi/full/10.1080/10826084.2020.1735436?fbclid=IwAR2wldZ7PjI3zqZ2CsDwp5KQ2nIwjiBnEodzET2pqjpr9KAocrqaY1rVyY->
4. Ramsey SE, Engler PA, Stein MD. Alcohol Use Among Depressed Patients: The Need for Assessment and Intervention. Prof Psychol Res Pr. 2005; 36(2):203-207. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2874911>.
5. Mandić-Gajić G. Sekundarna depresija kod alkoholičara – klinički značaj. Vojnosanit Pregl. 2005; 62(9): 671–677. Available from: <http://www.doiserbia.nb.rs/img/doi/0042-8450/2005/0042-84500509671M.pdf>.
6. Stanojević D, Jaredić B, Mandić S. Depresivnost kod adolescenata na Kosovu i Metohiji. Timočki medicinski glasnik. 2012; 40(3): 187–220. dostupno na: <http://www.tmg.org.rs/v370406.htm>.
7. Jackson-Koku G. Questionnaire review. Beck Depression Inventory. Occupational Medicine 2016;66:174–175. Available from: https://watermark.silverchair.com/kqv087.pdf?token=AQECAHi208BE490oan9kKhW_Ercy7Dm3ZL9Cf3qfKAc485ysgAAAI4wggjaBgkqhkiG9w0BBwagggLMIICRwIBADCCAKAGCSqGSIb3.
8. Williams N. The AUDIT questionnaire. Occupational Medicine. 2014; 64 (4): 308. Available from: <https://doi.org/10.1093/occmed/kqu011>.
9. Kuria MW, Ndeti DM, Obot IS, Khasakhala LI, Bagaka BM, Mbugua MN, Kamau J. The Association between Alcohol Dependence and Depression before and after Treatment for Alcohol Dependence. ISRN Psychiatry. 2012;482802. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3658562/_ffn_sectitle.
10. Khalid A, Kunwar AR, Rajbhandari KC, Sharma VD, Regmi SK. A study of prevalence and comorbidity of depression in alcohol dependence. Indian J Psychiatry. 2000;42(4):434–438. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2962747/pdf/IJPsy-42-434.pdf>.
11. Boschloo L, Vogelzangs N, Smit JH, Brink W, Veltman DJ, Beekman ATF et al. Comorbidity and risk indicators for alcohol use disorders among persons with anxiety and/or depressive disorders. Findings from the Netherlands Study of Depression and Anxiety (NESDA). Journal of Affective Disorders. 2011. 131 (1–3): 233–242. Available from: <https://www.sciencedirect.com/science/article/pii/S0165032710007494?via%3Dihub>.
12. Wichaidit W, Pruphetkaew N, Assanangkornchai S. Variations by sex and age in the association between alcohol use and depressed mood among Thai adolescents. Plos One. 2019. Available from: <https://journals.plos.org/plosone/article/authors?id=10.1371/journal.pone.0225609>
13. Danzo S, Connell AM, Stormshak EA. Associations between alcohol-use and depression symptoms in adolescence: Examining gender differences and pathways over time. J Adolesc. 2017;56:64–74. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5578443/>
14. Zhan W, Shaboltas AV, Skochilov RV, Kozlov AP, Krasnoselskikh TV, Abdala N. Gender differences in the relationship between alcohol use and depressive symptoms in St. Petersburg, Russia. J Addict Res Ther. 2012;3(2):1000124. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3519357/>.
15. Boykoff N, Schneekloth TD, Hall-Flavin D, et al. Gender differences in the relationship between depressive symptoms and cravings in alcoholism. Am J Addict. 2010;19(4):352–356. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4671371/>.
16. Nazroo JY. Exploring Gender Difference in Depression. Psychiatric Times. 2001; 18: (3). Available from: <https://www.psychiatristimes.com/depression/exploring-gender-difference-depression>.
17. Brière FN, Rohde P, Seeley JR, Klein D, Lewinsohn PM. Comorbidity between major depression and alcohol use disorder from adolescence to adulthood. Comprehensive psychiatry. 2014; 55(3): 526–533. Dostupno na: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4131538/>.
18. Subramaniam M, Valli Mahesh M, Xu Peh C, Tan J, Fauziana R, Satghare Pet al. Hazardous alcohol use among patients with schizophrenia and depression. Alcohol. 2017; 65: 63–69. Available from: <https://reader.elsevier.com/reader/sd/pii/S0741832916302828?token=840872A69CF6EE320435564672CB2AF00847E78DE646B8706E11F58439EB8B6F7DBA54171ACDBBF51AE8324A7719BF38>.
19. Powers J, Duffya L, Burns L, Loxtona D. Binge drinking and subsequent depressive symptoms in young women in Australia. Drug and Alcohol Dependence. 2016; 161: 86–94. Available from: <https://www.sciencedirect.com/science/article/abs/pii/S0376871616000478?via%3Dihub>.
20. Ying Lee Y, Wang P, Abidin E, Chang S, Shafie S, Sambasivam Ret al. Prevalence of binge drinking and its association with mental health conditions and quality of life in Singapore. Addictive Behaviors. 2020; 100: 106114. Available from: https://www.sciencedirect.com/science/article/pii/S0306460319304460?fbclid=IwAR2S5_Zp04p2wuPjlg1uRtUBmI0aDrMe5PwAG_nVNh7v6YhX4Zulo6-zQ7A
21. Li J, Wang H, Li M, Shen Q, Li X, Zhang Yet al. Effect of alcohol use disorders and alcohol intake on the risk of subsequent depressive symptoms: a systematic review and meta-analysis of cohort studies. Addiction. 2020. Available from: https://onlinelibrary.wiley.com/doi/abs/10.1111/add.14935?fbclid=IwAR1hALiPkFt9JbwL1N_92P7IJOsr6l0sd9gKkohtTYKVXdeMHj9gHjhl7o
22. Paulson D, Shah M, Herring D, Scott R, Herrera M, Brush Det al. The relationship between moderate alcohol consumption, depressive symptomatology, and C-reactive protein: the Health and Retirement Study. Int J Geriatr Psychiatry. 2018; 33: 316–324. Available from: <https://onlinelibrary.wiley.com/action/showCitFormats?doi=10.1002%2Fgps.4746>
23. García-Esquinas E, Ortolá R, Galán I et al. Moderate alcohol drinking is not associated with risk of depression in older adults. Sci Rep .2018; 8: 11512 (2018). Available from: <https://www.nature.com/articles/s41598-018-29985-4?fbclid=IwAR1H7j0jTuVNvYuOMaGDBkNedvVtMat-2Hw9l5ddLG8pLDbwM4KIDjMGdtU>

UDK 616.895.4-056.83
613.81
COBISS.SR-ID 16466185

FACTORS AFFECTING DEVELOPMENT OF DEPRESSION IN PEOPLE WHO DRINK ALCOHOL

Jandric-Kocic Marijana

HEALTH CENTER KRUPA NA UNI, REPUBLIC OF SRPSKA

SUMMARY : Introduction: About 90% of people consume alcohol at some point in their lives. Alcohol abuse occurs in 5-10% of these, while addiction develops in 10% of men and 3-5% of women. Alcohol consumption can induce depression or contribute to its severity. Objective: The study aimed to examine the existence of statistically significant associations between patterns of drinking alcohol, duration of alcohol use, and sociodemographic factors with depression present in persons consuming alcohol. Materials and Methods: The cross-sectional study included 100 individuals, 25.0% women and 75.0% men, with an average of 53.0 ± 1.5 years consuming alcohol over a period of eight months, from 01.10.2018. to 01.06.2019. at the Krupa Health Center on the Una. In addition to the additional tests, they also used the Audit of Identity Disorders Identification Disorders (AUDIT) test and Beck's Depression Inventory (BDI). Results: Participants with harmful alcohol drinking had a statistically significant presence of depression compared to subjects with other alcohol drinking patterns ($p < 0.05$). There was no statistically significant difference in the presence of depression in relation to the duration of alcohol use ($p = 0.09$) and the gender of subjects consuming alcohol ($p = 0.07$). Participants aged 40-59 with high school diploma who consumed alcohol had statistically significant presence of depression in relation to other good groups and the level of education ($p < 0.05$). Conclusion: The study confirmed the significant role of harmful alcohol drinking, the age and level of education in the development of depression in persons consuming alcohol.

Keywords: alcohol, abuse, mental health, depression

INTRODUCTION

Alcohol consumption is a socially acceptable activity in Western Europe. In our region it is favoured to the level of an obligatory ritual in many social situations. It is estimated that about 90% of people consume alcohol at some point in their life. Alcohol abuse occurs in 5-10%, while addiction develops in 10% of men and 3-5% of women [1,2,3]. Alcohol consumption can induce depression or contribute to its severity through several potential mechanisms. Moderate doses of alcohol reduce the concentration of tryptophan, homovalinic acid, γ -amino butyric acid, N-methyl-D aspartate endogenous opioids. Its use has a negative impact on cognitive functions, contributes to feelings of inferiority, guilt and hopelessness, disrupts interpersonal relationships, and induces delinquency [4]. A primary depressive disorder in persons who consume alcohol precedes alcohol intoxication and/or alcohol withdrawal or occurs within four weeks after alcohol consumption has stopped. Between these two periods, there can only be alcohol-induced depression that is considered a

consequence of abstinence syndrome and goes away spontaneously. Depression that persists after four weeks of abstinence is considered secondary [5].

OBJECTIVE

The aim of the study was to investigate: -1): the existence of statistically significant correlation of alcohol drinking pattern with the presence of depression in alcohol drinkers, -2): the existence of statistically significant association of the duration of alcohol use with the presence of depression in alcohol drinkers, -3) : the existence of a statistically significant association of sociodemographic factors with the presence of depression in alcohol drinkers.

MATERIAL AND METHODS

The cross-sectional study included 100 people who consumed alcohol for a period of eight months from 01.10.2018. do 01.06.2019. at the Krupa Health Center on the Una. The criteria for inclusion of the respondents in the study were: age between 20 and 79 years, completed

primary school and anamnestic data on alcohol consumption for at least twelve months. The study excluded persons: over the age of 79 and under 20 with alcohol consumption of less than twelve months, as well as all persons with malignant and advanced chronic diseases (chronic renal failure, heart decompensating, liver failure). Data were collected through the use of general and specific questionnaires. The general questionnaire collected sociodemographic data (gender and age, level of education). Beck's Depression Inventory (BDI) is used as an indicator of the existence and intensity of depressive symptoms that are in accordance with the current Diagnostic and Statistical Manual of Mental Disorders (DSM). Today, another revised version recommended by the American Psychiatric Association (APA) is in use. It consists of 21 statements (each statement is a list of four statements ranked according to the intensity of a particular symptom of depression) that we score from 0 to 3. A total score of 0 to 13 excludes the existence of depression. The results in the interval of 14 to 19 speak in favour of mild depression. There is moderate depression in the score 20-28. Severe depression is present in patients who have a score of 29-63 [6,7]. The Alcohol Use Disorders Identification Test (AUDIT) is intended for the early identification of risky and harmful drinking as well as alcohol dependence, developed and recommended by the World Health Organization (WHO). The test consists of three questions in the area of risky alcohol use (frequency of

drinking, typical amount, frequency of heavy drinking), three questions covering the symptoms of addiction (diminished control over drinking, increased drinking desire, morning drinking) and four questions in the area of harmful alcohol use (guilt after drinking, amnesia, alcohol-related injuries, environmental concerns), which we score 0-4. Score 0-7 is in favour of low-risk drinking. The result in the interval 8-15 corresponds to risky drinking. Harmful drinking is present in subjects with a score of 16-19. The score 20-40 reveals alcohol abuse [1,8]. Descriptive statistical methods were used to analyse the data: abundance frequency distribution, arithmetic mean, standard deviation, and percentages. To determine statistical significance the χ^2 -independence test was used. The significance level was set at 95% confidence interval. The results are presented textually, in tabular form and graphically, and the complete work is processed in Microsoft Word for Windows text processor.

RESULTS

The study included 100 patients. Among them, 25.0% were women and 75.0% were men. The majority of respondents who consume alcohol (58%) are 40-59 years of age. The average age of the study population was 53.0 ± 1.5 years. Women were statistically significantly older than men. 22% of respondents had completed primary school, 2% had college education. High school graduation rate was 76%.

Table 1. Distribution of alcohol drinkers by gender, age and education level

Age (years)	MenNo (%)	WomenNo (%)	TotalNo (%)
20-39	10 (10,0%)	0 (0,0%)	10 (10,0%)
40-59	58 (58,0%)	16 (16,0%)	74 (74,0%)
60-79	7 (7,0%)	9 (9,0%)	16 (16,0%)
TotalNo (%)	75 (75,0%)	25 (25,0%)	100 (100,0%)
Level of education	MenNo (%)	WomenNo (%)	TotalNo (%)
Primary school	12 (12,0%)	10 (10,0%)	22 (22,0%)
High school	61 (61,0%)	15 (15,0%)	76 (76,0%)
College	2 (2,0%)	0 (0,0%)	2 (2,0%)
TotalNo (%)	75 (75,0%)	25 (25,0%)	100 (100,0%)

Most participants (69%) consumed alcohol for 20-30 years. The second most frequent were respondents (19%) who consumed alcohol for a

period of 10-20 years. The smallest number of study participants (12%) consumed alcohol for 1-10 years.

Graph 1. Length of drinking alcohol in years of participants
N = 100

The highest number of respondents (49%) identified risky drinking. Low-risk drinking was verified in 35% of respondents, harmful drinking in 13%. The smallest number of respondents reported alcohol abuse (3%). Male

respondents, 40-59 year old with high school diploma as well as alcohol drinkers for 20-30 years had a statistically significantly higher percentage of risky and harmful drinking as well as alcohol dependence.

Table 2. Distribution of gender, age and education level of alcohol drinkers by AUDIT (alcohol use disorders identification test)

Characteristics		Score 0-7**	Score 8-15***	Score 16-19****	Score ≥20*****	p value*
Gender	Men	19 (25,3%)	43 (57,4%)	10 (13,3%)	3 (4,0%)	NS, 0.07
	Women	16 (64,0%)	6 (24,0%)	3 (12,0%)	0 (0,0%)	
Age in years	20-39 years of age	1 (10,0%)	7 (70,0%)	2 (20,0%)	0 (0,0%)	< 0.05
	40-59 years of age	20 (27,0%)	40 (54,1%)	11 (14,9%)	3 (4,0%)	
	60-79 years of age	14 (87,5%)	2 (12,5%)	0 (0,0%)	0 (0,0%)	
Education level	Primary school	13 (59,1%)	6 (27,3%)	3 (13,6%)	0 (0,0%)	< 0.05
	High school	22 (28,9%)	41 (53,9%)	10 (13,2%)	3 (4,0%)	
	College	0 (0,0%)	2 (100,0%)	0 (0,0%)	0 (0,0%)	
Length of drinking alcohol in years	1-10 years	1 (8,3%)	10 (83,4%)	1 (8,3%)	0 (0,0%)	< 0.05
	10-20 years	10 (52,6%)	9 (47,4%)	0 (0,0%)	0 (0,0%)	
	20-30 years	24 (34,8%)	30 (43,4%)	12 (17,4%)	3 (4,3%)	

LEGEND: *According to hi square test or Fisher test; **Low-risk drinking; ***Risky drinking; **** Harmful drinking; *****Alcohol abuse.

Depression was reported in 42 (46.0%) men and 15 (60.0%) women. 6 (8.0%) men and 8 (32.0%) women had moderate depression. Severe depressive disorders were verified in 3 (4.0%) men and 1 (4.0%) woman. The study could not detect a statistically significant difference in the presence of depression in relation to the gender

of alcohol-consuming subjects ($p = 0.07$). Depression was present in 4 (40.0%) subjects aged 20-39 years, 49 (66.2%) subjects aged 40-59 years and 4 (25.0%) subjects aged 60-79 years. Moderate depressive disorders were experienced by 1 (10.0%) subject aged 20-39 years, 12 (16.2%) subjects aged 40-59 years and

1 (6.2%) subject aged 60-79 years. Severe depressive disorders were found in 4 (5.4%) persons aged 40-59 years. Presence of depression in subjects 40-59 years of age who consumed alcohol was statistically significantly more frequent than in subjects of other age groups ($p < 0.05$). Depression problems were experienced by 12 (44.5%) respondents with completed primary education and 43 (46.6%) respondents with completed secondary education. Moderate depression was found in 3 (13.6%) subjects with completed primary education and 11 (14.5%) subjects with completed secondary education. Severe depressive disorders were verified in 4 (5.3%) of high school graduates. Participants in the study who consumed alcohol with high school diploma had presence of depression statistically significantly more frequent compared to respondents with other levels of education ($p < 0.05$). Depression was found in 8 (66.7%) subjects who consumed alcohol for 1-10 years, 14 (95.0%) subjects who consumed alcohol for 10-20 years, and 35 (50.7%) subjects who consumed alcohol for 20-30 years. Moderate

depressive disorders were experienced by 3 (25.0%) subjects who consumed alcohol for 1-10 years, 7 (7.0%) subjects who consumed alcohol for 10-20 years, and 4 (5.8%) subjects who consumed alcohol for 20-30 years. Severe depressive disorders were verified in 4 (4.0%) subjects who consumed alcohol for 10-20 years. There was no statistically significant difference in the presence of depression in alcohol drinkers with respect to the duration of alcohol consumption ($p = 0.09$).

Depression was verified in 13 (37.1%) subjects with low-risk drinking, 28 (47.1%) subjects with risky drinking, and all (100%) subjects with harmful drinking and alcohol abuse. Moderate depression was experienced by 4 (8.2%) subjects with risky drinking and 10 (76.9%) by subjects with harmful drinking. Severe depressive disorders were identified in 1 (7.7%) subject with harmful drinking and 3 (100.0%) subjects with alcohol abuse. Respondents with harmful drinking had presence of depression statistically significantly more frequent than subjects with other drinking patterns ($p < 0.05$).

Table 3. Distribution of sociodemographic characteristics, length of drinking alcohol and drinking patterns of alcohol drinkers by BDI (Beck's Depression Inventory)

Characteristics		Score 0-13**	Score 14-19***	Score 20-28****	Score ≥29*****	p value*
Gender	Men	33 (44,0%)	33 (44,0%)	6 (8,0%)	3 (4,0%)	NS, 0.07
	Women	10 (40,0%)	6 (24,0%)	8 (32,0%)	1 (4,0%)	
Age in years	20-39 years of age	6 (60,0%)	3 (30,0%)	1 (10,0%)	0 (0,0%)	< 0.05
	40-59 years of age	25 (33,8%)	33 (44,6%)	12 (16,2%)	4 (5,4%)	
	60-79 years of age	12 (75,0%)	3 (18,8%)	1 (6,2%)	0 (0,0%)	
Education level	Primary school	10 (45,5%)	9 (40,9%)	3 (13,6%)	0 (0,0%)	< 0.05
	High school	33 (43,4%)	28 (36,8%)	11 (14,5%)	4 (5,3%)	
	College	0 (0,0%)	2 (100,0%)	0 (0,0%)	0 (0,0%)	
Length of drinking alcohol in years	1-10 years	4 (33,3%)	5 (41,7%)	3 (25,0%)	0 (0,0%)	NS, 0.09
	10-20 years	5 (5,0%)	3 (3,0%)	7 (7,0%)	4 (4,0%)	
	20-30 years	34 (49,3%)	31 (44,9%)	4 (5,8%)	0 (0,0%)	
Alcohol drinking pattern	Low-risk drinking	22 (62,9%)	13 (37,1%)	0 (0,0%)	0 (0,0%)	< 0.05
	Risky drinking	21 (42,9%)	24 (49,0%)	4 (8,2%)	0 (0,0%)	
	Harmful drinking	0 (0,0%)	2 (15,4%)	10 (76,9%)	1 (7,7%)	
	Alcohol abuse	0 (0,0%)	0 (0,0%)	0 (0,0%)	3 (100,0%)	

LEGEND: *According to hi square test or Fisher test; ** Absence of depression problems; *** Mild depression problems; **** Moderate depression problems; ***** Severe depression problems;

DISCUSSION

The study found that depression was present in 64% of people who consumed alcohol (39% mild depression, 14% moderate depression, and 4% severe depression). In a study by a group of authors in Kenya, secondary depression was present in 68.3% of alcohol drinkers [9]. Studies conducted in England have verified the existence of moderate depression in 47% of people diagnosed with alcoholism. Severe depressive disorders were reported by 34% of people consuming alcohol [1]. A study by a group of authors in Nepal found that there was depression in 41.7% of people hospitalized for alcohol abuse [10]. The study did not verify a statistically significant difference in the presence of depression compared to the gender of alcohol drinkers. Research by a group of authors from the Netherlands has concluded that women who consume alcohol have a statistically significantly higher risk of secondary depression [11]. Research by an author group in Taiwan and the United States has found a strong correlation between alcohol use and depression in upper elementary school students. Alcohol use in the early adolescent period results in changes in the frontal and limbic cortex responsible for affective damage [12,13]. Studies conducted in Russia have found that alcohol consumption in women is associated with a faster development of depression than in men. A possible reason is that women achieve higher levels of alcohol in their blood than men after drinking equivalent amounts of alcohol per kilogram of body weight [14,15]. In addition, women are at greater risk of developing depression as a result of gender differences in roles in contemporary society [16]. The age of 40-59 years was associated with statistically significantly more frequent presence of depression in alcohol drinkers. At that age, there may be an increased alcohol consumption in an attempt to cope with growing socioeconomic problems. Research by a group of American authors indicates that people who start consuming alcohol in older adulthood have a statistically significantly bigger chance of experiencing depression than their non-drinking peers [4]. Participants in the study with high school diploma who consumed alcohol had presence of depression which was statistically significantly more frequent compared to

respondents with completed primary school and university-educated persons. The more frequent presence of depression can be explained by significantly more frequent occurrence of harmful drinking and alcohol abuse in the same respondents. The duration of alcohol consumption did not statistically significantly influence the development of depression. Studies indicate that alcohol use leads to the development of depression quite early. Research in the United States indicates that over 28% of people who consume alcohol have developed depression by the age of 30 [17]. The pattern of alcohol consumption is closely related to the onset of depression in study participants. A study by a group of US authors indicates that men who drink 14-27 alcoholic beverages per week and women who drink 7-13 alcoholic beverages per week have a statistically significantly higher presence of depression than those who drink less alcohol [3]. Research conducted in Singapore has identified alcohol dependence as an independent predictive factor for the development of depressive disorders in female subjects [18]. Research conducted in Australia found a statistically significant association between alcohol abuse and the development of depression in young women [19,20]. A study conducted in China found that low-risk drinking significantly reduced the risk of depression in both sexes [21]. A study by a group of US authors found significantly fewer depression problems in the elderly with low-risk alcohol consumption (they had a statistically significantly lower C reactive protein concentration) [22]. Research by a group of authors in Spain has not found a protective effect of moderate alcohol consumption on the development of depression in the elderly [23].

CONCLUSION

Harmful drinking is a strong predictor of the presence of depression. The duration of alcohol use was not statistically significantly associated with the presence of depression. There is no statistically significant difference in the presence of depression in relation to the gender of alcohol drinkers. 40-59 years of age and secondary education were associated with the presence of depression in people consuming alcohol.

LITERATURE:

1. Republička stručna komisija za izradu i implementaciju vodiča dobre kliničke prakse. Nacionalni vodič dobre kliničke prakse Alkoholizam. Ministarstvo zdravlja Republike Srbije. 2013. Available from: <http://www.batut.org.rs/download/nacionalni%20vodici/vodiciZaDijagnostikovanjeIlečenjeAlkoholizma.pdf>.
2. Sher L. Depression and alcoholism.QJM: An International Journal of Medicine.2004; 97 (4): 237–240. Available from: <https://doi.org/10.1093/qjmed/hch04>
3. Toornstra A, Massar K, Hurks PPM, Timmermans MMMS, Kok G, Curfs LMG. Perceptions of Alcohol and Alcohol Use among Community Members and Young Adults in Ukraine. Substance Use & Misuse. 2020. Available from: <https://www.tandfonline.com/doi/full/10.1080/10826084.2020.1735436?fbclid=IwAR2wldZ7PjI3zq2ZcSdwp5KQ2nlwjiBnEodzET2pqjpr9KAocrqaY1rVyY->
4. Ramsey SE, Engler PA, Stein MD. Alcohol Use Among Depressed Patients: The Need for Assessment and Intervention. Prof Psychol Res Pr. 2005; 36(2):203-207. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2874911>.
5. Mandić-Gajić G. Sekundarna depresija kod alkoholičara – klinički značaj. Vojnosanit Pregl. 2005; 62(9): 671–677. Available from: <http://www.doiserbia.nb.rs/img/doi/0042-8450/2005/0042-84500509671M.pdf..>
6. Stanojević D, Jaredić B, Mandić S. Depresivnost kod adolescenata na Kosovu i Metohiji. Timočki medicinski glasnik.2012; 40(3): 187-220. dostupno na: <http://www.tmg.org.rs/v370406.htm>.
7. Jackson-Koku G. Questionnaire review. Beck Depression Inventory. Occupational Medicine 2016;66:174–175. Available from: https://watermark.silverchair.com/kqv087.pdf?token=AQECAHi208BE490oan9kKhW_Ercy7Dm3ZL_9Cf3qfKAc485ysgAAAI4wggJaBgkqhkiG9w0BBwagglLMIIICRwIBADCCAGCSqGSib3.
8. Williams N. The AUDIT questionnaire. Occupational Medicine. 2014; 64 (4): 308. Available from:<https://doi.org/10.1093/occmed/kqu011>.
9. Kuria MW, Ndeti DM, Obot IS, Khasakhala LI, Bagaka BM, Mbugua MN, Kamau J. The Association between Alcohol Dependence and Depression before and after Treatment for Alcohol Dependence. ISRN Psychiatry. 2012:482802. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3658562/#_ffn_sectitle.
10. Khalid A, Kunwar AR, Rajbhandari KC, Sharma VD, Regmi SK. A study of prevalence and comorbidity of depression in alcohol dependence. Indian J Psychiatry. 2000;42(4):434–438. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2962747/pdf/IJPsy-42-434.pdf>.
11. Boschloo L, Vogelzangs N, Smit JH, Brink W, Veltman DJ, Beekman ATF et al. Comorbidity and risk indicators for alcohol use disorders among persons with anxiety and/or depressive disorders. Findings from the Netherlands Study of Depression and Anxiety (NESDA). Journal of Affective Disorders.2011. 131 (1–3): 233-242. Available from: <https://www.sciencedirect.com/science/article/pii/S0165032710007494?via%3Dihub>.
12. Wichaidit W, Pruphetkaew N, Assanangkornchai S. Variations by sex and age in the association between alcohol use and depressed mood among Thai adolescents. Plos One. 2019. Available from: <https://journals.plos.org/plosone/article/authors?id=10.1371/journal.pone.0225609>
13. Danzo S, Connell AM, Stormshak EA. Associations between alcohol-use and depression symptoms in adolescence: Examining gender differences and pathways over time. J Adolesc. 2017;56:64-74. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5578443/>
14. Zhan W, Shaboltas AV, Skochilov RV, Kozlov AP, Krasnoselskikh TV, Abdala N. Gender differences in the relationship between alcohol use and depressive symptoms in St. Petersburg, Russia. J Addict Res Ther. 2012;3(2):1000124. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3519357/>.
15. Boykoff N, Schneekloth TD, Hall-Flavin D, et al. Gender differences in the relationship between depressive symptoms and cravings in alcoholism. Am J Addict. 2010;19(4):352–356. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4671371/>.
16. Nazroo JY. Exploring Gender Difference in Depression. Psychiatric Times.2001; 18: (3). Available from: <https://www.psychiatristimes.com/depression/exploring-gender-difference-depression>.
17. Brière FN, Rohde P, Seeley JR, Klein D, Lewinsohn PM. Comorbidity between major depression and alcohol use disorder from adolescence to adulthood. Comprehensive psychiatry.2014; 55(3): 526–533. Dostupno na: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4131538/>.
18. Subramaniam M, Valli Mahesh M, Xu Peh C, Tan J, Fauziana R, Satghare Pet al. Hazardous alcohol use among patients with schizophrenia and depression. Alcohol. 2017; 65: 63-69. Available from: <https://reader.elsevier.com/reader/sd/pii/S0741832916302828?token=840872A69CF6EE320435564672CB2AF00847E78DE646B8706E11F58439EB8B6F7DBA54171ACDBBF51AE8324A7719BF38>.
19. Powersa J, Duffya L, Burnsb L, Loxtona D. Binge drinking and subsequent depressive symptoms in young women in Australia. Drug and Alcohol Dependence. 2016; 161: 86-94. Available from: <https://www.sciencedirect.com/science/article/abs/pii/S0376871616000478?via%3Dihub>.
20. Ying Lee Y, Wang P, Abdin E, Chang S, Shafie S, Sambasivam Ret al. Prevalence of binge drinking and its association with mental health conditions and quality of life in Singapore. Addictive Behaviors.2020; 100: 106114. Available from: https://www.sciencedirect.com/science/article/pii/S0306460319304460?fbclid=IwAR2S5_Zp04p2wuPjlg1uRtUBm10aDrMe5PwAG_nVNh7v6YhX4Zulo6-zQ7A
21. Li J, Wang H, Li M, Shen Q, Li X, Zhang Yet al. Effect of alcohol use disorders and alcohol intake on the risk of subsequent depressive symptoms: a systematic review and meta-analysis of cohort studies. Addiction.2020. Available from: https://onlinelibrary.wiley.com/doi/abs/10.1111/add.14935?fbclid=IwAR1hALiPkFt9JbwL1N_92PV7IJ0sr6l0sd9gKkohtYKVXdeMHj9gHjhl7o
22. Paulson D, Shah M, Herring D, Scott R, Herrera M, Brush Det al. The relationship between moderate alcohol consumption, depressive symptomatology, and C-reactive protein: the Health and Retirement Study. Int J Geriatr Psychiatry.2018; 33: 316– 324. Available from: <https://onlinelibrary.wiley.com/action/showCitFormats?doi=10.1002%2Fggs.4746>
23. García-Esquinas E, Ortolá R, Galán I et al. Moderate alcohol drinking is not associated with risk of depression in older adults. Sci Rep .2018; 8: 11512 (2018). Available from: <https://www.nature.com/articles/s41598-018-29985-4?fbclid=IwAR1H7j0jTuVNvYuOMaGDBkNedvVtMat-2Hw9l5ddlG8pLDbwM4KDijMGdtU>