

RESEARCH ARTICLE

# Does Gender Moderate the Association of Peer Pressure on Alcohol Use during Emerging Adulthood of Students? A Multi-Group Analysis

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## Abstract

*Peer pressure and alcohol use in tertiary institutions remains a challenge amongst emerging adults. The study examined the moderating influence of gender on the association between dimensional peer pressure and alcohol consumption. The study employed a non-probability convenient sampling technique. The sample consisted of 414 participants who were students recruited from six faculties. Data collection used the Peer Pressure Inventory (PPI) and Alcohol Use Dependence Identification Test (AUDIT) on an online platform. Data were analysed using the Statistical Package for the Social Sciences Version 25 (SPSS-25), and structural equation modelling tested assumptions. There was no gender difference in terms of the relationship between peer conformity and misconduct on alcohol use. Results indicated an increased family involvement, which predicted lower alcohol consumption among females but not in males. School and peer involvements were not related to alcohol use in both genders. Family involvement against peer influence on the use of alcohol may be a protective factor in females, but not in males. Males were more likely to conform to peer pressure than females.*

## Keywords

*peer pressure, family involvement, alcohol use, gender, students, higher education*

## Introduction

Alcohol use often leading to abuse is a major public health issue worldwide. Six people die every minute from harmful alcohol use with a total death toll of 3 million annually, as estimated in the global status report on alcohol and health (WHO, 2018). Globally, harmful alcohol use is responsible for 18% of interpersonal violence and suicides, 20% of tuberculosis, 27% of traffic injuries, 26% of mouth cancers and 48% of liver cirrhosis (WHO, 2018). The 2018 report on alcohol and health ranked South Africa as the country

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experiencing the deadliest patterns of alcohol intake in Africa, with 41.2% of women and 48.1% of men engaging in heavy drinking and a yearly average consumption of 9.5 litres per individual (WHO, 2018). It is noteworthy that the alcohol per-capita consumption (APC) in South Africa seems high compared to other African countries. South Africa is ranked amongst the top five countries in Africa with the highest usage of alcohol, recording 9.3 litres of APC, with Seychelles being 13.8 litres, Nigeria 13.4 litres, Gabon 11.5 litres and Equatorial Guinea 11.3 litres (WHO, 2019). Despite the various alcohol policy reforms in place, heavy drinking continues to be a major problem in South Africa (Trangenstein et al., 2018). The increase in alcohol use has been reported as a challenge in institutions of higher learning (Kyei & Ramagoma, 2013; Young & De Klerk, 2008)

Alcohol use related-problems cut across all age groups, however, is it more prevalent amongst emerging adults (18–25 years of age) (Grant et al., 2004; Simons–Morton et al., 2016; Wilcox et al., 2010). In a South African university study, Nyandu and Ross (2020) noted 88% alcohol use in emerging adults, with 40% identified as binge drinkers. In a similar study conducted in a university in Limpopo Province, Kyei and Ramagoma (2013) reported that 65% consume alcohol, with 49% abusing it. Lategan et al. (2017) reported a 55.1% hazardous alcohol consumption rate among 474 emerging adults in South African university settings.

The university environment is considered a predisposing factor towards increased alcohol use, and reportedly, students in institutions of higher learning drink more than their peers who are not exposed to the university environment (Lorant et al., 2013). The debilitating pattern of alcohol consumption during emerging adulthood can be attributable to the intense turbulence from feeling in-between, identity exploration, uncertainties and instabilities that differentiate this life stage from other human developmental phases (Arnett et al., 2014). According to Arnett (2000), emerging adults feel in-between because they are neither at the dependency stages between adolescence and the enduring responsibility stage of adulthood. As part of the emerging adult stage, explorations may lead to alcohol use to relieve emotional symptoms and turmoil.

Regarding alcohol use by gender, studies showed that males consume higher quantities of alcohol and experience more alcohol related problems than females (Agabio et al., 2017; Lee & Chen, 2017). This difference is often attributed to the traditional gender role expectations, which allow males to consume more alcohol and freely express their level of drinking compared to females (Erol & Karpyak, 2015). Female students are reported to engage in alcohol consumption mostly to regulate stress reactivity and negative effects (Peltier et al., 2019).

In terms of peer influence and alcohol use, it was noted that strong and healthy relationships with peers during emerging adulthood is proposed as a protective measure against heavy drinking (Zhu et al., 2019) . This implies that healthy or unhealthy peer influence at this stage may have profound consequences on alcohol consumption among emerging adults. This notion was reiterated by Boyd and colleagues (2014), in that the perception of peer group heavy drinking tendencies predicted an increase in the level of alcohol consumption. There is also evidence that heavy drinkers select peers who are

also heavy drinkers (Stappenbeck et al., 2010). This could be associated with the need to conform to the norms of the peers. Studer and colleagues (2016) further stated that misconduct and involvement with peers predicted an increase in the level of alcohol consumption, while conformity to peer standard predicted a decrease in alcohol use. There was a similar outcome reported in which an increase in peer pressure to engage in misconduct was associated with an increase in drinking behaviour (Grazioli et al., 2018); however, Lee-Zorn (2011) indicated that increased consumption of alcohol was influenced by greater levels of peer conformity. As such, peer influence may serve as both a risk and protective factor for alcohol intake.

Gender difference has been indicated, where males are generally shown to be more susceptible to peer pressure compared to females (Chatterjee et al., 2017; McCoy et al., 2019). However, literature regarding gender differences in dimensional peer pressure is lacking (Clasen & Brown, 1985); this also includes literature in addressing peer pressure dimensions in emerging adults.

Theory of peer pressure by Clasen and Brown (1985) demonstrated that the influence of peers on individuals could assume different dimensions, which include pressure to engage in misconduct, conformity to peer norms, involvement with peers, and peer involvement in school and in the family. The aim of the current study was to examine whether the association between peer pressure and alcohol use varies according to gender. The findings of the study may contribute to knowledge regarding the role of gender in the relationship between peer pressure and alcohol use. This may ultimately inform institutions of higher learning of policy development and interventions in managing alcohol use.

## *Method*

### **Sample**

Using the cross-sectional approach, the conveniently recruited 414 emerging adults, who were undergraduates of North-West University (NWU), Mafikeng Campus, South Africa. As shown in Table 1, there were 269 females and 145 males, with an average age of 23.05 ( $\pm 3.85$ ). The sample consisted mainly of those aged 22–25 (50.5%), single (97.6%) and in their fourth year (43.2). The distribution of the participants was across six of the seven faculties in the Mafikeng Campus of the university. Altogether, the faculties of health sciences (25.1%), humanities (24.4) and commerce (21.5) comprised up to 71% of the total sample size, while the remaining 29% were among faculties of education (10.9%), Law (5.3%) and agricultural, science and technology (12.8%).

### **Procedure and ethical considerations**

Prior to commencement of the study, the Health Research Ethics Committee (HREC) of the faculty of health sciences, NWU, granted approval. An invitation to participate in the study was sent out using online platforms, inclusive of eFundi (an NWU online teaching and learning platform that connects lecturers and registered students) and

the NWU Facebook page. Participation took place without the use of coercion or intimidation. The online invitation provided a QRL code. The opening of the QRL code provided a link to the purpose of the study. The potential participant would then proceed to complete the informed consent form and the questionnaire. Author contact details were provided in case participants needed further clarification regarding the study. The study maintained anonymity, confidentiality and the privacy of participants throughout. Each participant received a ZAR 10 airtime voucher as a token of appreciation. Data collection occurred over a five-week period. Due to the exclusion of psychology students, there was no conflict of interest.

### *Instruments*

The Peer Pressure Inventory (PPI) (Clasen & Brown, 1985) assessed the perception of peer influence. This study used a shorter PPI version, containing 22 items (Azeez et al., 2020). The 22-item PPI was measured using a 4-point Likert scale format, ranging from “no response to do” (0) to “a lot of pressure to do” (3) in the present study. There was an internal consistency coefficient of 0.79 obtained for the 22-item PPI in this study. The five dimensional structure of the PPI moderately fits the data of this study, with adjusted goodness of fit (AGFI) and root mean square error of approximation (RMSEA) values of 0.83 and 0.87 respectively. High scores indicate an increase in peer pressure across the five dimensions.

The Alcohol Use Dependence Identification Test (AUDIT-C) is a shorter form of the 10-item AUDIT developed by the World Health Organization (Saunders et al., 1993). The three items in AUDIT-C assess the use and frequency of alcohol use. In previous studies, the full version of AUDIT has performed similarly to the AUDIT-C for detecting the frequency of drinking (Du Preez et al., 2016; Seth et al., 2015). This questionnaire has previously been utilised within the South African population (Du Preez et al., 2016). The Cronbach’s  $\alpha$  report was 0.73; scores ranging from 6 to 7 and 8 to 12 indicate high and severe risk of harm from alcohol use respectively, while those less than 6 suggest low to moderate risk of harm.

In addition to the PPI and AUDIT-C, there were other socio-demographic variables measured, including gender, age, marital status, level of study and the faculty to which participants belonged.

### *Statistical analysis*

Analysis included descriptive and inferential data using the SPSS version 20.0 and the analysis on moment structure (AMOS) software version 25. The testing of the moderating effect of gender on the association between dimensional peer pressure and alcohol used an invariance test and multi-group analysis. The selection of the maximum likelihood (ML) was used as an estimation method. Model fitness was assessed using comparative fit index (CFI), Tucker–Lewis index (TLI), standardised root-mean-square residual (SRMR), and root-mean-square error of approximation (RMSEA). To achieve a good model fit, CFI and TLI values must be above .90, while SRMR and RMSEA must be less than .08

and .06 respectively (Kline, 2011). There was no multicollinearity issue, given that the bivariate associations among the dimensions of peer pressure were between .09 and .50.

## Results

### Risk of harm from alcohol use and mean differences on continuous variables

Table 1 displays the prevalence of alcohol use risk and mean scores on all continuous variables stratified by gender. High and severe risk of harm from alcohol use together constitute 24.6%. Both males (17.93%) and females (16.7%) had almost equal percentages on high risk of harm from alcohol use. Compared to females (4.46%), a higher percentage of males (13.10%) indicated severe risk of harm. Males significantly consumed a greater quantity of alcohol than females ( $p=.002$ ), although with a small effect size ( $d=.32$ ). Similarly, males were more pressured by peers to engage in misconduct ( $p=.003$ ) and to be more involved with peers ( $p=.001$ ) compared to females, with small ( $d=.31$ ) and moderate ( $d=.52$ ) respectively. There were no significant mean differences on peer conformity ( $p=.13$ ), family involvement ( $p=.92$ ) and school involvement ( $p=.91$ ). Overall, males reported increased peer pressure than females ( $p=.006$ ), albeit with small effect size ( $d=.52$ ).

**Table 1: Social demographics distribution and mean differences on continuous variables stratified by gender**

| n (%) or M (SD)                | Male n =145<br>(35) | Female n =<br>269 (65) | Total N =<br>414 | $\chi^2/t(d)$  |
|--------------------------------|---------------------|------------------------|------------------|----------------|
| <b>Age category (in years)</b> |                     |                        |                  | <b>15.07**</b> |
| 18-21                          | 37 (25.5)           | 98 (36.4)              | 135 (32.6)       |                |
| 22-25                          | 70 (48.3)           | 139 (51.7)             | 209 (50.5)       |                |
| > 25                           | 38 (26.2)           | 32 (11.9)              | 70 (16.9)        |                |
| <b>Marital status</b>          |                     |                        |                  | <b>1.01</b>    |
| Single                         | 143 (98.6)          | 261 (97)               | 404 (97.6)       |                |
| Married                        | 2 (1.4)             | 8 (3)                  | 10 (2.4)         |                |
| <b>Level of study</b>          |                     |                        |                  | <b>2.27</b>    |
| 1st year                       | 22 (15.2)           | 48 (17.8)              | 70 (16.9)        |                |
| 2nd year                       | 28 (19.3)           | 42 (15.6)              | 70 (16.9)        |                |
| 3rd year                       | 29 (20)             | 66 (24.5)              | 95 (22.9)        |                |
| 4th year                       | 66 (45.5)           | 113 (42)               | 179 (43.2)       |                |
| <b>Faculty</b>                 |                     |                        |                  | <b>24.60**</b> |
| Commerce                       | 35 (24.1)           | 54 (20.1)              | 89 (21.5)        |                |
| Education                      | 11 (7.6)            | 34 (12.6)              | 45 (10.9)        |                |
| FAST                           | 31 (21.4)           | 22 (8.2)               | 53 (12.8)        |                |
| Health Sciences                | 34 (23.4)           | 70 (26)                | 104 (25.1)       |                |
| Humanities                     | 23 (15.9)           | 78 (29)                | 101 (24.4)       |                |
| Law                            | 11 (7.6)            | 11 (4.1)               | 22 (5.3)         |                |

| n (%) or M (SD)            | Male n =145<br>(35) | Female n =<br>269 (65) | Total N =<br>414 | $\chi^2/t(d)$  |
|----------------------------|---------------------|------------------------|------------------|----------------|
| <b>Alcohol use risk</b>    |                     |                        |                  | <b>11.52**</b> |
| Low                        | 58 (40)             | 111 (41.3)             | 169 (40.8)       |                |
| Moderate                   | 42 (29)             | 101 (37.5)             | 143 (34.5)       |                |
| High                       | 26 (17.9)           | 45 (16.7)              | 71 (17.1)        |                |
| Severe                     | 19 (13.1)           | 12 (4.5)               | 31 (7.5)         |                |
|                            |                     |                        |                  |                |
| Age (in years)             | 23.72 (3.07)        | 22.69 (2.99)           | 23.05 (3.06)     | 3.32** (.34)   |
| Alcohol use                | 4.34 (2.55)         | 3.58 (2.34)            | 3.85 (2.44)      | 3.08** (.32)   |
| Peer pressure (full score) | 25.41 (9.63)        | 22.85 (8.77)           | 23.75 (9.15)     | 2.74** (.28)   |
| Misconduct                 | 3.47 (2.85)         | 2.66 (2.52)            | 2.94 (2.67)      | 2.98**(.31)    |
| Peer conformity            | 3.71 (2.04)         | 3.39 (1.92)            | 3.51 (1.96)      | 1.53 (.11)     |
| Family involvement         | 3.89 (2.22)         | 3.87 (2.18)            | 3.88 (2.19)      | .11 (.01)      |
| Peer involvement           | 4.15 (2.67)         | 2.97 (2.04)            | 3.38 (2.35)      | 5.03** (.52)   |
| School involvement         | 5.16 (1.84)         | 5.14 (1.77)            | 5.15 (1.79)      | .12 (.01)      |

### Bivariate associations of peer pressure dimensions with alcohol use

Table 2 presents the bivariate associations between peer pressure dimensions and alcohol use separately for males and females. Among females, there were significant and positive correlations of alcohol use with peer pressure to engage in misconduct ( $r=.37, p < .001$ ), peer involvement ( $r=.12, p = .046$ ), and negative association with family involvement ( $r=-.16, p = .009$ ); however, only peer pressure to engage in misconduct was significantly and positively related to alcohol use among males ( $r= .46, p < .001$ ). The overall score on peer pressure was associated with alcohol use in males ( $r= .22, p = .008$ ) but not among females ( $r= .06, p = .35$ ).

**Table 2: Bivariate associations among variables for females (below the diagonal) and males (above the diagonal)**

| N = 414                | 1      | 2      | 3     | 4     | 5     | 6     | 7     | 8     |
|------------------------|--------|--------|-------|-------|-------|-------|-------|-------|
| Age (1)                |        | .07    | -.11  | -.02  | -.11  | -.15  | -.11  | -.08  |
| Alcohol use (2)        | .01    |        | .22** | .46** | -.02  | .07   | .11   | .09   |
| Peer pressure (3)      | -.22** | .06    |       | .55** | .74** | .63** | .73** | .65** |
| Misconduct (4)         | -.05   | .37**  | .61** |       | .25** | .12   | .34** | .09   |
| Peer conformity (5)    | -.12*  | -.003  | .70** | .34** |       | .39** | .44** | .50** |
| Family involvement (6) | -.19** | -.16** | .61** | .11   | .28** |       | .32** | .42** |
| Peer involvement (7)   | -.18** | .12**  | .70** | .41** | .42** | .33** |       | .34** |
| School involvement (8) | -.17** | -.07   | .65** | .18** | .50** | .35** | .31** |       |

### Comparison of the unconstrained and the constrained structural models

The structural model constrained across gender was compared to the unconstrained structural coefficients for model invariance. Table 3 indicates the fit indices for the constrained and unconstrained models, with both models showing adequateness in fit. The Chi-square difference test indicates a significant difference between the constrained and unconstrained models at  $\chi^2(3) = 10.61, p = .06$ . The results suggest that the influence of peer pressure dimensions on alcohol use is not the same for both males and females.

**Table 3: Models fit indices for unconstrained and constrained models**

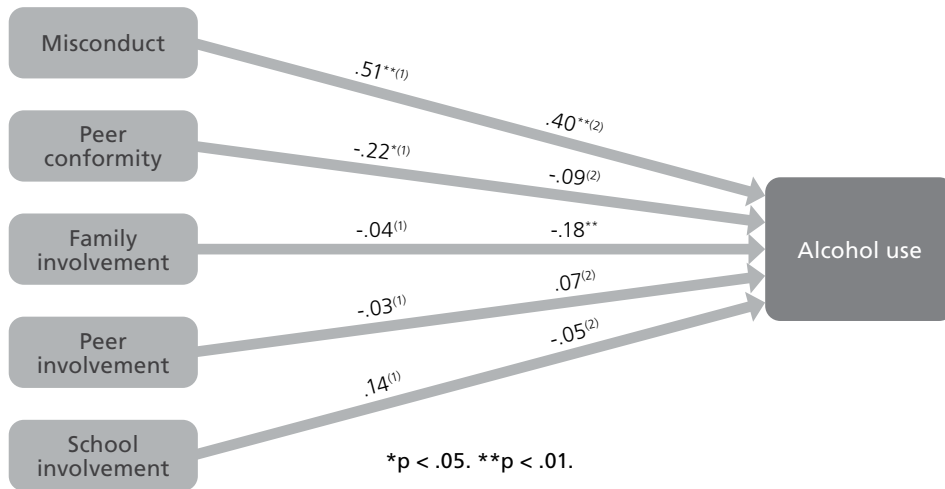
| Models        | $\chi^2$ | Df | <i>P</i> | CFI | TLI | SRMR | RMSEA (90% CI)  |
|---------------|----------|----|----------|-----|-----|------|-----------------|
| Unconstrained | 11.41    | 4  | .02      | .98 | .88 | .04  | .067 (.02, .11) |
| Constrained   | 22.017   | 9  | .009     | .97 | .90 | .07  | .057 (.03, .09) |

*CFI = Comparative fit index; TL = Tucker-Lewis index; SRMR = standardised root-mean-square residual; RMSEA = Root-mean-square error of approximation*

### Differences in structural path coefficients

Given that the influence of dimensional peer pressure is not the same across gender, it then follows to check where the difference exists. Figure 1 presents the structural model for the influence of dimensional peer pressure on alcohol use in both males and females. The results showed that only peer pressure to engage in misconduct was significant on alcohol use in both males ( $\beta = .51, p < .001$ ) and females ( $\beta = .40, p < .001$ ). Specifically, an increase in pressure to engage in misconduct predicted an increase in alcohol use. Peer involvement (Males:  $\beta = -.03, p = .76$ ; Females:  $\beta = .07, p = .26$ ) and school involvement (Males:  $\beta = .14, p = .10$ ; Female:  $\beta = -.05, p = .41$ ) were not significant on alcohol use in both genders. Peer conformity influenced alcohol use among males ( $\beta = -.22, p = .01$ ), but not in females ( $\beta = -.09, p = .18$ ); however, an increase in peer conformity predicted a decrease in alcohol use. Conversely, family involvement influenced alcohol use in females ( $\beta = -.18, p = .003$ ), but not in males ( $\beta = .05, p = .63$ ); an increase in family involvement predicted a decrease in alcohol use.

In order to examine the moderating effect of gender, each of the paths from misconduct, peer conformity and family involvement to alcohol use were constrained one after the other. Outcomes showed that the path from family involvement was different for males and females ( $\chi^2 [1] = 4.37, p = .037$ ). This means that gender moderated the association of family involvement with alcohol use, as there was an association confirmed in females and not in males; however, the paths from misconduct ( $\chi^2 [1] = .88, p = .35$ ) and peer conformity ( $\chi^2 [1] = 1.42, p = .23$ ) were not significantly different across gender.



**Figure 1: Structural Model for the associations between dimensional peer influence and alcohol use in males (1) vs females (2). Positive figures indicate statistically significant differences in the path coefficients.**

### Discussion

The focus of the current study was to investigate the moderating role of gender on the association between dimensional peer pressure and alcohol use in a sample of emerging adults. The overall results showed a 24.6% rate for high/severe risk of harm from alcohol use, which is about one in four emerging adults, indicating an increased risk of experiencing harm. Although this rate may be considered low compared to the 55% found by Kyei and Ramagoma (2013) and Lategan et al. (2017), these findings could be due to difference in settings, such as developed versus developing countries, and geographical locations of these universities (urban versus rural).

There were gender differences in alcohol consumption indicated; males were shown to consume a significantly higher quantity of alcohol than females. These findings are consistent with reports in literature (Agabio et al., 2017; Lee & Chen, 2017). Gender role expectations could be associated with the increased consumption of alcohol by males (Erol & Karpyak, 2015).

The peer pressure dimension of misconduct indicates a greater amount of peer pressure to engage in misconduct amongst males compared to females. The results further show no significant differences in other aspects of peer pressure (conformity, family involvement, peer involvement, and school involvement). Clasen and Brown (1985) partially concurred that there was no gender disparity found in their study in some dimensions of peer pressure, which includes peer conformity, family and school involvements. Although females experience pressure from peers, the effect is lower in comparison to males. These outcomes are consistent with previous work that showed that males are generally more susceptible to peer pressure compared to females



(Sayantani et al., 2017; McCoy et al., 2019). Previous studies (Studer et al., 2016; Grazioli et al., 2018) have shown that the dimensions of peer pressure are associated with the level of alcohol consumption among emerging adults.

Findings further show that peer pressure dimensions associated with alcohol consumption differ between males and females, while the association between peer pressure to engage in misconduct and alcohol use cut across both genders. The findings revealed that the increased peer pressure–misconduct dimension was associated with increased consumption of alcohol. When peer pressure is directed at engaging in misconduct and delinquent behaviours, then it is expected that one is likely to engage in alcohol use, given that alcohol intoxication in turn reinforces misbehaviours (Gatti et al., 2013). This implies that engagement in maladaptive behaviours among peers may include vandalism, substance use and theft, and can co-occur with increased alcohol intake (Gatti et al., 2013). This finding supports a previous study by Studer et al. (2016), which demonstrated that misconduct is positively associated with an increased drinking volume in a large sample of Swedish young men. Similar outcomes were reported by Grazioli and colleagues (2018).

Peer pressure dimensions of peer and family involvement indicated a significant association with alcohol use. The results showed a strong association between females with peer and family involvements, in comparison to males. Peer involvement associated positively with alcohol use, while peer influence on behaviours towards parents and the family in general associated negatively with the use of alcohol among females. Social interactions or involvement with peers in terms of leisure engagements, may lead to increased alcohol intake among females, whereas peer influence towards family may relate with low level of alcohol use. Therefore, family relations play a significant role with these emerging adults (Oliveira et al., 2019). Although, the current results indicate that family involvement fosters reduced level of alcohol use in females, this could be attributable to gender disparity in traditional roles. Additionally, Erol and Karpyak (2015) indicate that overall acceptance of male expression of drinking behaviour may indirectly be an enabler towards peer involvement and ultimately increased alcohol consumption, while family involvement in females serves as a protective factor, resulting in reduced levels of alcohol consumption.

Of all the peer-pressure dimensions, only the family involvement dimension was moderated by gender in alcohol use. An increase in the family involvement dimension predicted lower alcohol use among females, but there was no such outcome found among males. Family involvement may influence female emerging adults' behaviour towards adaptive conduct, such as responsible and less harmful alcohol consumption. Parents may encourage peers who share positive family values to associate with one another (McMorris et al., 2011). The expectation is that female emerging adults will mingle more with peers who share positive orientations regarding how one should behave towards ones' parents and the family in general. This is line with the social learning theory, in which behaviour is learned through modelling and imitation from the immediate environment.

The influence of peer conformity on alcohol use was significant among males, but not in females. Despite the difference, multi-group analysis did not detect any moderating effect of gender. This could be because the difference was not large enough to warrant a moderating effect. Given that peer conformity associated negatively with alcohol use in males, it is inferential that conformity to the general peer norms, which form the basis for exhibiting appropriate conduct in one's peer group, may prevent engagement in maladaptive behaviours such as excessive alcohol and other substance use (Studer et al., 2016).

Although the findings of this study are novel, especially the outcome showing the moderating effect of gender on the association of peer pressure regarding family involvement and alcohol use, it is necessary that the current results be interpreted within certain limitations. First, the association between peer pressure dimensions and alcohol consumption is not causal because the current study design is not longitudinal but cross-sectional. In addition, the current study employed convenient sampling, which may have affected the gender distribution (fewer male participants); future studies may need to employ more robust sampling methods.

### *Conclusion*

This study confirms that gender moderates the association between dimensional peer pressure and alcohol use. However, this moderating influence is specific at the association between peer pressure concerning family involvement and alcohol consumption. Gender did not significantly moderate the associations of peer pressure to engage in misconduct and peer conformity with alcohol use. Additionally, peer pressure dimensions of peer involvement and school involvement did not significantly relate to alcohol use. Encouraging peer pressure relating to family involvement, specifically among the female emerging adults, may limit the harmful consumption of alcohol.

Action-orientated intervention programmes in institutions of higher learning should lean towards improving awareness and supporting students to reduce and ultimately assist with issues that perpetuate increased alcohol use. Additionally, alternative programmes and recreational activities that promote individual talents and skills may serve as a protective factor, resulting in reduced alcohol use.

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