

With a little help from my friends? A longitudinal look at the role of peers versus friends on adolescent alcohol use

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Abstract

Introduction: Alcohol is the most commonly used substance by South African adolescents. Social norms play a key role in alcohol use, although distinctions are not always made between descriptive and injunctive norms and peer proximity. Additionally, little research identifies factors attenuating social norms, peer proximity, and alcohol use, such as one's ability to resist peer influence.

Methods: The current study investigates the relationship between adolescent alcohol use in 9th Grade and descriptive peer and injunctive friend norms in 8th grade, the moderating role of resistance to peer influence, and sex differences. Data were from South African students (N=3592; Mage=14) participating in the HealthWise South Africa implementation quality trial.

Results: Path model results indicated injunctive friend norms, but not peer norms, influenced alcohol use. Resistance to peer influence did not moderate relationships and group comparisons found no sex differences.

Conclusion: Findings suggest social proximity shapes influences of alcohol use. Despite a differing cultural context, findings were consistent with those from the United States, indicating social proximity is relevant cross-culturally.

Keywords: Adolescence; Alcohol use; Peer influence; Sex differences; Longitudinal analyses

1. Introduction

As with United States (U.S.) adolescents (Kann et al., 2016), alcohol is the most commonly used substance by South African (S.A.) adolescents (Reddy et al., 2013). However, there is a critical need for formative research on factors that may contribute to S.A. adolescents' alcohol use (Magidson et al., 2017). Perceived alcohol norms are proximal influences on drinking behavior in U.S. samples, but the mechanisms by which peers influence S.A. adolescents' alcohol use is relatively unknown (Brook, Morojele, Pahl, & Brook, 2006). Prior research suggests both descriptive (i.e., perceptions of others behavior) and injunctive (i.e., perceptions of what others behavior should be) norms are associated with adolescents own substance use (Elek, Miller-Day, & Hecht, 2006), although less research has focused on injunctive alcohol norms (Pedersen et al., 2017). When studying social norms, an important consideration is who serves as the normative referent (Jackson et al., 2014). Social identity (Terry & Hogg, 1996) and reference group theory (Hyman & Singer, 1968) posit more proximal relationships have a stronger influence on individual behaviors than distal ones. Cross-sectional U.S. research finds perceptions of friends', rather than peers', drinking are more influential on adolescent drinking (Beckmeyer & Weybright, 2016).

The association between descriptive and injunctive alcohol norms and adolescent drinking may be moderated by alcohol refusal self-efficacy, which may lessen the likelihood of conforming to perceptions of peers' and friends' approval and use (Teunissen et al., 2016). Additionally, adolescent sex may also shape the associations between perceived alcohol norms and alcohol use due to differences in drinking behavior (Magidson et al., 2017), interpersonal relationship socialization (Seiffge-Krenke, 2011), drinking acceptability socialization (Schulte, Ramo, & Brown, 2009), and ability to resist peer influence (Steinberg & Monahan, 2007).

Extending previous work with U.S. samples (Beckmeyer & Weybright, 2016) we used multiple group path analysis to understand the influence of descriptive and injunctive norms on later alcohol use. Specifically, we tested a) the influence of 8th grade S.A. adolescents' descriptive peer norms and injunctive friend norms on 9th grade alcohol use, b) whether friend norms were stronger than peer norms, c) whether 8th grade refusal self-efficacy moderated these relationships, and d) sex differences in models.

2. Methods

2.1. Participants and procedures

Data are from the HealthWise South Africa (see Caldwell et al., 2012) trial testing program implementation conditions across 56 high schools in Cape Town, South Africa. The current study used data from Waves 2 (W2) and 3 (W3) collected at the end of 8th and 9th grade. During these waves, all students received the same prevention curriculum with differing implementation support conditions. The final sample (N=3592) included students with data on outcomes of interest at W2 and W3. At W2, students were on average 14 years old, 54% were female, and predominantly mixed race (47%) or Black (44%), and 69% lived in a brick house, flat, or apartment (see Table 1 for demographics). Study demographics are

comparable to the S.A. Youth Risk Behavior Survey for high school students in the Western Cape where 53% are female, 52% mixed race, 42% Black, and 76% live in a brick house, flat, or apartment (Reddy et al., 2013). The study, passive parental consent, and student assent procedures were approved by the Institutional Review Board at study-affiliated universities and local education districts.

2.2. Measures

Past month alcohol use was measured by dichotomous past 30-day use (None or 1 or more.) Injunctive friend alcohol norms were assessed with the item “How many of your 5 closest friends think it's okay for someone your age to drink alcohol? (None to 5.) Descriptive peer alcohol norms were assessed with the item “Out of every 100 learners your age at your school, how many do you

Table 1
Demographics and main study variables for total sample and by sex.

	Total <i>N</i> = 3592	Males <i>n</i> = 1646	Females <i>n</i> = 1936
	<i>n</i> (%) or <i>M</i> (<i>SD</i>)	<i>n</i> (%) or <i>M</i>	<i>n</i> (%) or <i>M</i>
Age	13.9 (0.9)	14.1 (1.01)	13.8 (0.87)
Race			
Mixed race	2048 (57.2)	923 (56.1)	1125 (58.1)
Black	1259 (35.2)	586 (35.6)	673 (34.7)
White	202 (5.6)	102 (6.2)	100 (5.2)
Other	57 (1.6)	28 (1.7)	29 (1.5)
Indian	15 (0.4)	6 (0.4)	9 (0.5)
Household Type			
Brick house, flat, or apartment	2462 (68.8)	1152 (70.0)	1310 (67.8)
Wendy Hours or backyard building/room	409 (11.4)	180 (10.9)	229 (11.9)
Shack	401 (11.2)	180 (10.9)	221 (11.4)
Other	287 (8.0)	122 (7.4)	165 (8.5)
Tent	20 (0.6)	12 (0.7)	8 (0.4)
Past Month Alcohol Use			
No	70.3%	69.7%	70.95%
Yes	29.6%	30.3%	29.1%
Refusal Self-Efficacy	2.21 (1.11)	2.10 (1.14)	2.30 (1.07)

Note. Measures reported from 8th Grade. *M* = mean, *SD* = standard deviation. Refusal self-efficacy responses on 4-point scale from *Not sure at all* to *Very sure*.

Table 2
Goodness of fit results.

Model	df	Chi-sq	RMSEA	CFI
Full Sample				
Model 1	25	153.152	.038	.862
Sex Grouping				
Model 3	50	202.912	.042	.818
Model 4	55	205.425	.039	.821
Diff test	5	5.287 <i>p</i> = .3818		

Note: Model 2 imposing equality constraints on norms was not conducted. Model 4 imposes equality constraints across gender.

think drink alcohol at least once a month?” Response options were in increments of 10 from None of them, 10 of them, ...to All of them. Resistance to peer influence was assessed using the item “How sure are you that you could say no if someone offered you alcohol and you didn't want it?” with response options on a 4-point scale from *Not sure at all* to *Very sure*.

2.3. Analytic plan

MPlus was used to conduct a path analysis with five paths: descriptive peer norms, injunctive friend norms, refusal self-efficacy, and two interactions (Model 1). The WLSMV estimator was used due to the binary outcome of past month alcohol use. Models controlled for socioeconomic indicators, W2 alcohol use, and race and accounted for clustering within condition using TYPE=complex. Nested models imposing equality constraints on norms (Model 2) and gender (Model 4) were compared with Mplus difftest. Moderation was tested with two interactions between refusal self-efficacy and descriptive and injunctive norms. Multiplegroup path analysis tested for gender differences (Model 3).

3. Results

Injunctive friend norms predicted adolescents' own alcohol use but descriptive peer norms did not (Model 1). Refusal self-efficacy did not moderate norms and alcohol use. Because only one norm item was significant, Model 2 which compared the strength of norm items was not run. Models did not differ by sex (Model 3 vs Model 4; $\Delta\chi^2=5.29$, $\Delta df=5$; $p=.38$). The final model (Model 1) demonstrated adequate fit (see Table 2 for model fit and Table 3 for path model estimates).

4. Conclusions

Despite receiving much attention in U.S. and European literature, social influences of adolescent alcohol use remain largely unstudied in developing countries (Atilola et al., 2014). When studying the influence of descriptive and injunctive alcohol norms, the role of social proximity is an important, yet often ignored, factor. Our results extend those of Beckmeyer and Weybright's (2016) by using longitudinal data from S.A. adolescents. When adolescents believe close friends approve of alcohol use, they are likely to drink themselves. However, perceptions of alcohol use in the broader peer group are unrelated to their drinking. Believing friends support drinking may lead to alcohol use out of concern for violating perceived friendship norms (Gibbons et al., 2004).

In the current study, refusal self-efficacy was not directly associated with alcohol use nor did it moderate the relationship between alcohol norms and use. The lack of moderation is in line with U.S. adolescent alcohol studies from Beckmeyer and Weybright (2016) and Graham, Marks, and Hansen (1991). However, Teunissen et al. (2016) did find adolescents' own substance use was only related to close friends' substance use behavior when adolescents were highly susceptible to peer influence. In the current study, it is possible that adolescent behavior was not driven by a desire to be similar to high-status peers and instead

adolescents felt more comfortable saying no to substance using friends. Sex differences did not emerge and therefore the associations between alcohol norms and adolescent alcohol use were similar for males and females. One possible explanation not accounted for is the sex and age of the friendship and peer networks, which may differentially influence adolescent use (Gaughan, 2006).

Findings are influenced socially and economically by the S.A. context. Qualitative S.A. studies have found both neighborhood and peer influences on adolescent use. Some neighborhood environments are reported to be tolerant of “widespread drug selling and use

Table 3
Path model estimates for model 1.

Variable	β	S.E.	p
Injunctive friend norms	0.126	0.033	< .0001
Descriptive peer norms	0.035	0.028	0.207
Refusal self-efficacy	0.071	0.040	0.071
Injunctive friend norms x refusal self-efficacy	- 0.038	0.023	0.095
Descriptive peer norms x refusal self-efficacy	0.042	0.027	0.111

Note: STDY standardized results listed due to binary nature of outcome variable. S.E. = standard error.

...” (Morojele, Brook, & Kachieng’A, 2006, p. 217) where peers serve as a source of pressure, access, and role models for use (Mudavanhu & Schenk, 2014). Such environmental and social factors may mean individual factors operate differently. For example, refusal skills may be predominantly employed within the community environment and outside of the peer context. Despite these differences, findings were consistent with U.S. adolescents indicating social proximity is relevant to adolescent alcohol use crossculturally.

Limitations of the current study included measures capturing alcohol norms at different level (e.g., proximity) and type (e.g., descriptive) and students who were all receiving some level of treatment. Future research should further explore the role of peer norms as a contributor to S.A. adolescent alcohol use and contextual moderators. U.S. and European substance use prevention approaches accounting for social influence have demonstrated significant long-term reductions in adolescent alcohol use (e.g., Faggiano et al., 2010). Given the similarity in findings between U.S. and S.A. adolescents, social influence approaches may also be successful with S.A. youth while keeping in mind unique historical and cultural influences.

Conflicts of interest

Authors declare no competing interest.

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References

- Atilola, O., Stevanovic, D., Balhara, Y. P. S., Avicenna, M., Kandemir, H., Knez, R., et al. (2014). Role of personal and family factors in alcohol and substance use among adolescents: An international study with focus on developing countries. *Journal of Psychiatric and Mental Health Nursing*, 21(7), 609–617. <https://doi.org/10.1111/.12133>.
- Beckmeyer, J. J., & Weybright, E. H. (2016). Perceptions of alcohol use by friends compared to peers: Associations with middle adolescents' own use. *Substance Abuse*, 37(3), 435–440. <https://doi.org/10.1080/08897077.2015.1134754>.
- Brook, J. S., Morojele, N. K., Pahl, K., & Brook, D. W. (2006). Predictors of drug use among South African adolescents. *Journal of Adolescent Health*, 38(1), 26–34. <https://doi.org/10.1016/j.jadohealth.2004.08.004>.
- Caldwell, L. L., Smith, E. A., Collins, L. M., Graham, J. W., Lai, M., Wegner, L., & Jacobs, J. (2012). Translational research in South Africa: Evaluating implementation quality using a factorial design. *Child and Youth Care Forum*, 42(2), 119–136. <https://doi.org/10.1007/s10566-011-9164-4>.
- Elek, E., Miller-Day, M., & Hecht, M. L. (2006). Influences of personal, injunctive, and descriptive norms on early adolescent substance use. *Journal of Drug Issues*, 36(1), 147–172.
- Faggiano, F., Vigna-Taglianti, F., Burkhart, G., Bohrn, K., Cuomo, L., Gregori, D., et al. (2010). The effectiveness of a school-based substance abuse prevention program: 18-Month follow-up of the EU-dap cluster randomized controlled trial. *Drug and Alcohol Dependence*, 108(1–2), 56–64. <https://doi.org/10.1016/j.drugalcdep.2009.11.018>.
- Gaughan, M. (2006). The gender structure of adolescent peer influence on drinking. *Journal of Health and Social Behavior*, 47(1), 47–61.
- Gibbons, F. X., Gerrard, M., Lune, L. S. V., Wills, T. A., Brody, G., & Conger, R. D. (2004). Context and cognitions: Environmental risk, social influence, and adolescent substance use. *Personality and Social Psychology Bulletin*, 30(8), 1048–1061. <https://doi.org/10.1177/0146167204264788>.
- Graham, J. W., Marks, G., & Hansen, W. B. (1991). Social influence processes affecting adolescent substance use. *Journal of Applied Psychology*, 76(2), 291–298.
- Hyman, H., & Singer, E. (1968). *Readings in reference group theory and research*. New York: Free Press.
- Jackson, K. M., Roberts, M. E., Colby, S. M., Barnett, N. P., Abar, C. C., & Merrill, J. E. (2014). Willingness to drink as a function of peer offers and peer norms in early adolescence. *Journal of Studies on Alcohol and Drugs*, 75(3), 404–414. <https://doi.org/10.15288/JSAD.2014.75.404>.
- Kann, L., McManus, T., Harris, W. A., Shanklin, S. L., Flint, K. H., Hawkins, J., et al. (2016). Youth risk behavior surveillance - United States, 2015. *MMWR. Surveillance Summaries*, 65 <https://doi.org/10.15585/mmwr.ss6506a1>.

- Magidson, J. F., Dietrich, J., Otjombe, K. N., Sikkema, K. J., Katz, I. T., & Gray, G. E. (2017). Psychosocial correlates of alcohol and other substance use among low income adolescents in peri-urban Johannesburg, South Africa: A focus on gender differences. *Journal of Health Psychology*, 22(11), 1415–1425. <https://doi.org/10.1177/1359105316628739>.
- Morojele, N. K., Brook, J. S., & Kachieng'A, M. A. (2006). Perceptions of sexual risk behaviours and substance abuse among adolescents in South Africa: A qualitative investigation. *AIDS Care*, 18(3), 215–219. <https://doi.org/10.1080/09540120500456243>.
- Mudavanhu, N., & Schenck, R. (2014). Substance abuse amongst the youth in Grabouw Western Cape: Voices from the community. *Social Work*, 50(3), 370–392. <https://doi.org/10.15270/50-2-405>.
- Pedersen, E. R., Osilla, K. C., Miles, J. N. V., Tucker, J. S., Ewing, B. A., Shih, R. A., et al. (2017). The role of perceived injunctive alcohol norms in adolescent drinking behavior. *Addictive Behaviors*, 67, 1–7. <https://doi.org/10.1016/j.addbeh.2016.11.022>.
- Reddy, S. P., James, S., Sewpaul, R., Sifunda, S., Ellahebokus, A., Kambaran, N. S., et al. (2013). Umthente uhlaba usamila - the 3rd South African national youth Risk behaviour Survey 2011. Cape Town, South Africa: South African Medical Research Council.
- Schulte, M. T., Ramo, D., & Brown, S. A. (2009). Gender differences in factors influencing alcohol use and drinking progression among adolescents. *Clinical Psychology Review*, 29(6), 535–547. <https://doi.org/10.1016/J.CPR.2009.06.003>.
- Seiffge-Krenke, I. (2011). Coping with relationship stressors: A decade review. *Journal of Research on Adolescence*, 21(1), 196–210. <https://doi.org/10.1111/j.1532-7795.2010.00723.x>.
- Steinberg, L., & Monahan, K. C. (2007). Age differences in resistance to peer influence. *Developmental Psychology*, 43(6), 1531–1543. <https://doi.org/10.1037/0012-1649.43.6.1531>.
- Terry, D. J., & Hogg, M. A. (1996). Group norms and the attitude-behavior relationship: A role for group identification. *Personality and Social Psychology Bulletin*, 22(8), 776–793. <https://doi.org/10.1177/0146167296228002>.
- Teunissen, H. A., Kuntsche, E., Scholte, R. H. J. J., Spijkerman, R., Prinstein, M. J., & Engels, R. C. M. E. (2016). Friends' drinking norms and male adolescents' alcohol consumption: The moderating role of performance-based peer influence susceptibility. *Journal of Adolescence*, 53, 45–54. <https://doi.org/10.1016/j.adolescence.2016.08.017>.