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## Leadership Qualities Emerging in an Online Social Support Group Intervention

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### Abstract

Technology-delivered interventions addressing a broad range of problems for which clients present for therapy are proliferating. However, little is known of leadership dynamics that emerge in online group interventions. The purpose of this study was to assess the types of leadership qualities that would emerge in an online social support group intervention to improve medication adherence for men with HIV, and to characterize the demographic and psychosocial profiles of leaders. Written posts ( $n=616$ ) from 66 men were coded using an adapted version of the Full Range Model of Leadership. Results showed that 10% ( $n=64$ ) of posts reflected one of five leadership types, the most common of which was mentoring/providing feedback (40% of leadership posts). The next most common leadership style were instances in which encouragement was offered (30% of leadership posts). Leaders appeared to have lived with HIV longer and have higher Internet knowledge scores than non-leaders. Results indicate that online group interventions potentially may be useful to supplement traditional face-to-face treatment by providing an additional venue for group members to mentor and provide emotional support to each other. However, additional research is needed to more fully understand leadership qualities and group dynamics in other online group intervention settings.

### Keywords

Internet; Group Intervention; Medication Adherence; Men who have Sex with Men; HIV

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The Internet is increasingly used to address common problems facing clients presenting for sexual and relationship therapy. For example, men randomized to an Internet-delivered cognitive behavior therapy for erectile dysfunction showed improved erectile performance at the 6-month follow-up compared to those in a control condition (Andersson et al., 2011). These results are supported by findings from another study, with the authors suggesting that

this medium for delivering erectile dysfunction intervention may be most beneficial for men who appreciate the convenience of the Internet and who are embarrassed by attending in-person therapy (Leusink & Aarts, 2006). Although the use of online social networking websites is high among adults living in the United States (US) (Brenner & Smith, 2013), few technology-delivered sexual health interventions incorporate peer-to-peer features that may be an important source of support for clients. An exception to this, Huker and McCabe (2012) administered an online chat group intervention to 38 women with sexual dysfunction. Qualitative analysis showed that the online group chat intervention was acceptable and liked by most women and that it was helpful in addressing cognitive-affective aspects of the intervention.

Likewise, technology-delivered interventions have proliferated in recent years to address rising rates of HIV and other sexually transmitted infections (Chiasson, Hirshfield, & Rietmeijer, 2010). Sustaining high levels of adherence to antiretroviral therapy (ART) remains a significant challenge for many people living with HIV (PLH) (Thompson et al., 2012). Sexual and relationship therapists who work with PLH benefit from greater understanding of the barriers to medication adherence among - as well as the availability of adherence-related resources for - clients given the importance of medication adherence to maintain their health, as well as data showing that high ART adherence significantly reduces the potential for onward transmission of HIV to their sexual partners (Cohen et al., 2011). A new wave of technology-delivered ART adherence interventions have been developed that circumvent time and geographic barriers inherent in face-to-face interventions (Saber & Johnson, 2011), as well as reduce implementation costs (Page, Horvath, Danilenko, & Williams, 2012). However, similar to current intervention research to address sexual dysfunction, few technology-delivered ART interventions have taken advantage of group formats despite evidence that online social networking website use is common among PLH (Horvath et al., 2012) and that offline peer support interventions are beneficial to participants (Marino, Simoni, & Silverstein, 2007; Van Tam et al., 2012).

In the first study of its kind, the *Thrive With Me (TWM)* intervention was developed to allow PLH to interact with each other in an online environment to assess the impact of this approach on ART adherence (for a full description of the study and its results, see Horvath et al., 2013). As with face-to-face approaches, online social support interventions benefit from peer leaders who may help to solidify group cohesion and motivate participation by other group members (Koh, Kim, Butler, & Bock, 2007). As such, we analyzed the written comments posted to the intervention home page to assess the styles of leadership that emerged in this online group context, as well as the characteristics of persons who appeared to be leaders, to inform future studies that utilize similar interactive, peer-to-peer features.

The Full Range Model of leadership (Avolio & Bass, 1990; Bass & Avolio, 1994) was used to code written comments. Although there are numerous theories of leadership, we chose the Full Range Model because it has been one of the most widely examined organizational leadership models, and because it incorporates dimensions that emphasize the leader's ability to "raise followers' aspirations and activate their higher-order values (Avolio et al., 2009, p. 428)." The Full Range Model recognizes two broad categories of leadership styles: transformational and transactional. Transformational leaders motivate followers by bringing

attention to task outcomes and by prompting followers to act for the good of the group rather than only for self-interest. The four characteristics of transformational leaders included in the Full Range Model are: (a) “idealized influence” characterizes leaders who are exemplary and admired by others in the group; (b) “inspirational motivation” refers to leaders who motivate or inspire followers to commit to a vision for the group (c) intellectual stimulation characterizes leaders who encourage innovation and creativity (i.e., finding new solutions to existing problems), and (d) individualized consideration is a leadership style in which leaders mentor and provide feedback and encourage followers. In contrast, transactional leadership styles emphasize the use of rewards and punishments to achieve group goals, and often highlight the use of supervisory oversight and monetary rewards for compliance. Transactional leadership styles and theories are thought to be based upon “economic cost-benefit assumptions” (Bass, 1985, p. 5)

Based on the Full Range Model of leadership, the purpose of this study was to: 1) assess the types of leadership qualities that would naturally emerge in an online social support ART adherence intervention and 2) characterize the demographic and psychosocial profiles of leaders.

## METHODS

### Study Overview

All procedures involving human subjects for the purpose of this study were approved by the University of Minnesota Institutional Review Board. Participants ( $n=123$ ) in the *TWM* study included HIV-positive gay and bisexual men in the United States who self-reported less than perfect adherence to their HIV medications in the past 30 days (Horvath et al., 2013). Only men randomized to the active treatment arm of the *TWM* study ( $n=66$ ) provided data for the current analyses, since those randomized to the control arm did not receive any intervention (i.e., the control arm was a null control condition). In an eight-week period in 2009, participants were given the opportunity to post online messages to other members of the treatment arm, to which other members could reply. Interactions between participants were asynchronous, such that members need not be in the online social space at the same time to receive or reply to other members' posts. Because we were interested in leadership qualities that emerged from participant interactions, we limited analyses to posts with at least one response from another participant (769 of 1181 total posts)

### Adapting the Full Range Model of Leadership

Based on a preliminary examination of participant posts, we adapted the Full Range Model of leadership to guide the coding process in the following ways. First, because the context of this intervention was not conducive to leader-follower exchanges described as transactional styles of leadership (i.e., exchanging goods or money for compliance by followers), we did not code for instances of transactional leadership. Second, based on the transformational leadership styles proposed in the Full Range Model, we defined (a) idealized influence, (b) inspirational motivation, and (c) intellectual stimulation as shown in Table 1. Third, the individualized consideration dimension of leadership was separated into two categories, (d) mentoring/providing feedback and (e) providing encouragement (definitions also shown in

Table 1). These were separated because we believed that doing so would capture an important nuance between providing specific guidance to a peer about ways to overcome a problem versus simply providing encouragement to a peer.

### Coding Process and Establishing Reliability

An individual post from a participant was considered the unit of analysis. Thus, a unit of analysis could range from a one word post to a post that contained multiple words and full sentences. Content of each post was coded for the following: a) whether it was a post from a participant or a staff member (yes/no, with staff member posts excluded from analysis); b) whether the post contained any of the five leadership styles described above (yes/no); c) the leadership style primarily reflected in the post; and d) if coded as “Idealized Influence”, the participant number of the participant who was admired.

To establish reliability, approximately one-fifth (19%; n=115) of the total number of coded posts (n=769) were randomly selected and coded by the first and second authors. Percent agreements for all variables in the coding system ranged from 89.5% to 99%. Kappas ranged from 0.66 for the type of leadership style to 0.80 for whether the post was a staff member or a participant, indicating substantial agreement between coders (Viera & Garrett, 2005).

### Measures

Demographic and psychosocial characteristics were assessed in a baseline survey (Table 2). Demographic characteristics included age (years), how long participants had been living with HIV (years), education (years of school), race (White, Black, Multi-racial), ethnicity (Hispanic identity), residency (from rural residency to central core of a large city), current employment status (part-time, full-time, disabled, unemployed, retired), and whether the participant is currently in school. We measured ART adherence by asking men to self-report what percentage of their HIV medication doses they correctly took in the past 30 days (Horvath et al., 2013).

Measures of psychosocial characteristics included Internet knowledge, depression, perceived stress, life chaos, stigma, and alcohol use. Current Internet knowledge was assessed using the iKnow scale (Potosky, 2007), which is a 14-item measure of one’s knowledge of Internet-related terms (e.g., “I know what a browser is.”) and how to perform Internet-related tasks (e.g., “I know how to create a website”; “I know how to enable and disable cookies on my computer.”;  $\alpha=.89$ ). Current depression was measured with the 10-item Center for Epidemiologic Studies – Depression Scale (CES-D) (Andresen, Malmgren, Carter, & Patrick, 1994), a widely used measure of depression in research studies ( $\alpha=.89$ ). The Perceived Stress Scale (Cohen, Kamarck, & Mermelstein, 1983) was used as a measure of the extent to which life situations are perceived as stressful ( $\alpha=.91$ ). The Life Chaos Scale is a 6-item measure of whether someone has a stable and predictable lifestyle ( $\alpha=.68$ ) (Wong, Sarkisian, Davis, Kinsler, & Cunningham, 2007). The HIV Stigma scale developed by Emlert (2005) was used to measure subjective perceptions of stigma by PLH ( $\alpha=.91$ ). The Alcohol Use Disorders Identification Test (AUDIT) was used to determine whether participants were at risk for alcohol dependency or hazardous alcohol consumption (Saunders, Aasland, Babor, de la Fuente, & Grant, 1993).

## Analysis Plan

The frequency and percentage of leadership categories were calculated. The frequency of leadership posts attributed each participant was examined to determine who emerged as a leader. Because there is no established benchmark for the number of leadership posts with which someone should be credited within an online group context such as this, we examined the data for an obvious cut-off point to define someone as a leader in the group. Overall, 23 men (34.8%) wrote one or more posts coded as one of the five leadership styles. Among these 23 participants, most were credited with only one (n=8 participants) or two (n=9 participants) leadership posts. However, only six participants were credited with having three or more (*range*=3–10) posts reflecting leadership qualities. Thus, these six men were considered “leaders” for the purpose of this analysis.

Finally, the demographic and psychosocial characteristics of leaders and non-leaders were compared using frequencies, percentages, and means where appropriate. Given the small cell sizes for leaders, we did not compare leaders and non-leaders using parametric statistical analyses. Rather, differences between leaders and non-leaders highlighted below were agreed upon by the authors through discussion.

## RESULTS

### Leadership Style

A total of 769 posts were examined for inclusion in the study. Of these, 153 (20%) posts were from staff members and were excluded from further analysis. Of the 616 posts from study participants, 552 (90%) did not reflect any leadership style. The remaining 64 (10%) posts from users were coded as reflecting one of the five leadership styles.

The most common leadership style to emerge was mentoring/feedback (representing 40% of all posts coded as a leadership style; n=26), followed by encouragement (30%; n= 19), inspirational motivation (14%; n=9), intellectual stimulation (11%; n=7), and idealized influence (5%; n=3). The definition for each transformational leadership category and an example quote are presented in Table 1.

### Demographic and Psychosocial Profiles of Leaders

As described earlier, six of the participants had three or more posts coded as reflecting a leadership style, and were identified as leaders for the purpose of the following analyses. The distribution of demographic and psychosocial factors of leaders (n=6) and non-leaders (n=60) are shown in Table 2. Leaders appeared similar to non-leaders with respect to age, ART adherence, schooling, race, residency, employment, student status, yearly salary, depressive symptoms, perceived stress, perceived HIV stigma, level of life chaos, and alcohol consumption. However, it appeared that there may be differences between leaders and non-leaders in the amount of time living with HIV and Internet knowledge. Those defined as leaders had lived with HIV for an average of 18 years, while the non-leaders had lived with HIV for an average of 11 years. Leaders also exhibited higher Internet knowledge scores than non-leaders (63 for leaders vs. 55 for non-leaders out of a possible 70 points).

## DISCUSSION

This study is unique in that it is the first to apply a well-recognized theory of leadership, the Full Range Model (Avolio & Bass, 1990; Bass & Avolio, 1994), to identify leadership styles that emerged in an online group ART adherence intervention, and to compare the demographic and psychosocial profiles of leaders and non-leaders. Two findings are notable and discussed below. First, the most common type of leadership style that emerged in this group intervention was mentoring/feedback, accounting for 40% of all posts coded as one of the five leadership styles; the second most common type leadership style was men providing encouragement to their peers. These findings are consistent with a prior study showing that many PLH would go online to understand how other HIV-positive persons coped with their HIV (Courtenay-Quirk et al., 2010). When given the opportunity, participants shared their experiences about living with HIV and managing their medications with other participants, and provided emotional support. Outside the area of HIV, these results support those of a prior study of an online chat group intervention that found that women with sexual dysfunction used the online tool as a way to receive feedback from other women (Hucker & McCabe, 2012). Together, these and other studies (Fox, 2011) suggest that online peer-to-peer interactions are particularly useful for people living with an ongoing illness or condition to share strategies for overcoming barriers to managing their health, as well as gaining emotional support from each other.

Second, the demographic and psychosocial profiles of leaders in this study did not appear to be different than non-leaders in most respects. However, leaders appeared to have more knowledge of how to use the Internet, as well as lived with HIV longer, than non-leaders. Future online group ART adherence interventions may benefit from selecting group leaders with these characteristics to promote greater group cohesion and motivate participation from other members. The demographic and psychosocial characteristics of leaders may vary by health condition, and therefore more research is needed to understand characteristics of leaders who emerge in other online group intervention contexts.

There were several limitations in this study. First, the small number of leaders in this study precluded formal statistical analysis comparing leaders and non-leaders. Second, the results are not generalizable to other intervention contexts or populations. Replicating the methods used in this study in future studies of online social support interventions would advance understanding in this area.

Despite these limitations, this study is the first to identify leadership qualities emerging in the context of an online social support ART adherence intervention, and increases understanding of emerging dynamics in online health intervention contexts. The results indicate that online group interventions potentially may be useful to supplement traditional face-to-face treatment with PLH by providing an additional venue for group members to mentor and provide emotional support to each other. If supported by further research, providers with clients who require additional support may refer them to online support groups to bolster the effectiveness of traditional, face-to-face therapy. However, further research is needed to more fully understand leadership qualities and group dynamics that may emerge in different online group intervention settings.



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## References

- Andersson E, Walen C, Hallberg J, Paxling B, Dahlin M, Almlöv J, Andersson G. A randomized controlled trial of guided Internet-delivered cognitive behavioral therapy for erectile dysfunction. *J Sex Med.* 2011; 8(10):2800–2809.10.1111/j.1743-6109.2011.02391.x [PubMed: 21797983]
- Andresen EM, Malmgren JA, Carter WB, Patrick DL. Screening for depression in well older adults: evaluation of a short form of the CES-D (Center for Epidemiologic Studies Depression Scale). *Am J Prev Med.* 1994; 10(2):77–84. [PubMed: 8037935]
- Avolio, B.J.; Bass, B.M. *The full range of leadership program: Basic and Advanced Manual.* Binghamton, NY: Bass, Avolio, and Associates; 1990.
- Avolio BJ, Walumbwa FO, Weber TJ. Leadership: current theories, research, and future directions. *Annu Rev Psychol.* 2009; 60:421–449.10.1146/annurev.psych.60.110707.163621 [PubMed: 18651820]
- Bass. *Leadership and Performance Beyond Expectations.* New York: Free Press; 1985. p. 256
- Bass, B.M.; Avolio, B.J. *Improving organizational effectiveness through transformational leadership.* Thousand Oaks, CA: Sage Publications; 1994.
- Brenner, J.; Smith, A. 72% of Online Adults are Social Networking Site Users. *Pew Internet and American Life Project*; 2013.
- Chiasson MA, Hirshfield S, Rietmeijer C. HIV Prevention and Care in the Digital Age. *JAIDS Journal of Acquired Immune Deficiency Syndromes.* 2010; 55:S94–S97.10.1097/QAI.1090b1013e3181fcb1878
- Cohen MS, Chen YQ, McCauley M, Gamble T, Hosseinipour MC, Kumarasamy N, Fleming TR. Prevention of HIV-1 Infection with Early Antiretroviral Therapy. *New England Journal of Medicine.* 2011; 0(0)10.1056/NEJMoa1105243
- Cohen S, Kamarck T, Mermelstein R. A global measure of perceived stress. *Journal of health and social behavior.* 1983; 24:385–396. [PubMed: 6668417]
- Courtenay-Quirk C, Horvath KJ, Ding H, Fisher H, McFarlane M, Kachur R, Harwood E. Perceptions of HIV-Related Websites Among Persons Recently Diagnosed with HIV. *AIDS patient care and STDs.* 2010; 24(2):105–115.10.1089/apc.2009.0228 [PubMed: 20064028]
- Emlert CA. Measuring stigma in older and younger adults with HIV/AIDS: An analysis of an HIV stigma scale and initial exploration of subscales. *Research on Social Work Practice.* 2005; 15:291–300.
- Fox, S. *Peer-to-peer healthcare: Many people—especially those living with chronic or rare diseases—use online connections to supplement professional medical advice.* Washington, D.C: Pew Research Center’s Internet & American Life Project; 2011.
- Horvath K, Danilenko G, Williams M, Simoni J, Amico KR, Oakes JM, Simon Rosser BR. Technology Use and Reasons to Participate in Social Networking Health Websites among People Living with HIV in the US. *AIDS and Behavior.* 2012; 16(4):900–910.10.1007/s10461-012-0164-7 [PubMed: 22350832]
- Horvath KJ, Michael Oakes J, Simon Rosser BR, Danilenko G, Vezina H, Rivet Amico K, Simoni J. Feasibility, Acceptability and Preliminary Efficacy of an Online Peer-to-Peer Social Support ART Adherence Intervention. *AIDS Behav.* 2013; 17(6):2031–2044.10.1007/s10461-013-0469-1 [PubMed: 23553347]
- Hucker A, McCabe MP. A Qualitative Evaluation of Online Chat Groups for Women Completing a Psychological Intervention for Female Sexual Dysfunction. *J Sex Marital Ther.* 2012.10.1080/0092623x.2012.675020
- Koh J, Kim YG, Butler B, Bock GW. Encouraging participation in virtual communities. *Commun ACM.* 2007; 50(2):68–73.10.1145/1216016.1216023

- Leusink PM, Aarts E. Treating erectile dysfunction through electronic consultation: a pilot study. *J Sex Marital Ther.* 2006; 32(5):401–407.10.1080/00926230600835361 [PubMed: 16959663]
- Marino P, Simoni JM, Silverstein LB. Peer support to promote medication adherence among people living with HIV/AIDS: the benefits to peers. *Soc Work Health Care.* 2007; 45(1):67–80.10.1300/J010v45n01\_05 [PubMed: 17804348]
- Page TF, Horvath KKJ, Danilenko GP, Williams M. A Cost Analysis of an Internet-Based Medication Adherence Intervention for People Living With HIV. *JAIDS Journal of Acquired Immune Deficiency Syndromes.* 2012; 60(1):1–4.10.1097/QAI.1090b1013e318250f318011
- Potosky D. The Internet knowledge (iKnow) measure. *Computers in Human Behavior.* 2007; 23(6): 2760–2777.
- Saberi P, Johnson MO. Technology-Based Self-Care Methods of Improving Antiretroviral Adherence: A Systematic Review. *PLoS ONE.* 2011; 6(11):e27533.10.1371/journal.pone.0027533 [PubMed: 22140446]
- Saunders JB, Aasland OG, Babor TF, de la Fuente JR, Grant M. Development of the Alcohol Use Disorders Identification Test (AUDIT): WHO Collaborative Project on Early Detection of Persons with Harmful Alcohol Consumption--II. *Addiction.* 1993; 88(6):791–804. [PubMed: 8329970]
- Thompson MA, Mugavero MJ, Amico KR, Cargill VA, Chang LW, Gross R, Nachega JB. Guidelines for Improving Entry Into and Retention in Care and Antiretroviral Adherence for Persons With HIV: Evidence-Based Recommendations From an International Association of Physicians in AIDS Care Panel. *Annals of Internal Medicine.* 2012; 156(11):817–833.10.7326/0003-4819-156-11-201206050-00419 [PubMed: 22393036]
- Van Tam V, Larsson M, Pharris A, Diedrichs B, Nguyen HP, Nguyen CT, Thorson A. Peer support and improved quality of life among persons living with HIV on antiretroviral treatment: A randomised controlled trial from north-eastern Vietnam. *Health Qual Life Outcomes.* 2012; 10:53.10.1186/1477-7525-10-53 [PubMed: 22606977]
- Viera A, Garrett J. Understanding interobserver agreement: the kappa statistic. *Family Medicine.* 2005; 37(5):360–363. [PubMed: 15883903]
- Wong MD, Sarkisian CA, Davis C, Kinsler J, Cunningham WE. The association between life chaos, health care use, and health status among HIV-infected persons. *J Gen Intern Med.* 2007; 22(9): 1286–1291.10.1007/s11606-007-0265-6 [PubMed: 17597350]



**Table 1**

## Leadership Codes, Definitions, and Example Posts

Leadership Category	Category Definition	Example Post
Mentoring/Providing Feedback	Providing mentoring and feedback to others. Typically, a post will be coded as “mentoring/providing feedback” if the leader directs follower(s) to engage in a specific behavior	“If you want to stop your meds or take a holiday, it’s best to stop ALL of them at the same time to decrease the chance of resistance. Also, you should know that if you do stop your meds, the virus will begin to replicate again and your disease may progress. You should consider talking it over with your health care provider.”
Encouragement	A member providing encouragement to other members. A post will be coded as “encouragement” if the leader provides emotional or motivational support to a follower, but does not necessarily direct them to engage in a specific behavior	“It [taking HIV meds] makes a big difference.....just remember...You are worth it.....”
Inspirational Motivation	A member who motivates or inspires other users and who tries to build a greater sense of community or group cohesion	“Hello All! I think this site has served the purpose it was designed to do. The initial survey (and the cash too) caused me to think about meds in many different ways. Also it helps to see how others cope...”
Intellectual Stimulation	A member who encourages others to be creative (thinking outside the box) and approach old problems with new solutions (innovative)	“What meds are you taking? Is there any reason you can’t put your nightly meds in a bottle that goes on your pillow you wake up and sits at your bedside while you sleep?”
Idealized Influence	A member who others state that they admire or respect	“Hey! No need to “sir” me anymore...I’m out now! LOL I saw you are prior AF. Thanks for your service, xxxx!;-) As we in the army say...HOOAH!”

**Table 2**

## Demographic and Psychosocial Characteristics of Leaders and Non-Leaders

		Leader (n=6) Mean (SD)	Non-leader (n=60) Mean (SD)
Age in years	Years	43.3 (4.3)	42.2 (10.4)
ART adherence	0–100% past 30 days	79.7 (38.1)	84.5 (24.6)
Living with HIV	Years	18.0 (5.9)	11.4 (7.6)
Schooling	Years	16.2 (2.3)	14.8 (2.4)
Internet Knowledge <sup>a</sup>	(range 0–70)	62.5 (4.3)	54.5 (10.1)
Depression <sup>b</sup>	10-item CES-D	12.5 (9.2)	12.7 (7.0)
Perceived Stress <sup>c</sup>		18.0 (9.7)	18.3 (7.5)
HIV Stigma <sup>d</sup>		25.3 (8.3)	28.2 (10.2)
Life Chaos <sup>e</sup>		15.5 (5.0)	16.1 (4.4)
		% (n)	% (n)
Race	White	50.0 (3)	68.3 (41)
	Black	33.3 (2)	31.7 (19)
	Multi-ethnic/Other	16.7 (1)	0 (0)
Hispanic	Yes	0 (0)	7 (11.7)
Residency	Rural	0 (0)	10.0 (6)
	Small town	0 (0)	15.0 (9)
	Medium city	50.0 (3)	18.3 (11)
	Large city	50.0 (3)	36.7 (22)
Employment	Central Core Large City	0 (0)	20.0 (12)
	Part-time work	0 (0)	11.7 (7)
	Full-time work	33.3 (2)	44.1 (26)
	Disabled	50.0 (3)	33.9 (20)
	Unemployed	16.7 (1)	11.9 (7)
	Retired	0 (0)	6.9 (4)
Student	Yes	16.7(1)	11.9 (7)
Yearly salary (US\$)	0–20000	33.3 (2)	27.6 (16)
	20001–40000	50.0 (3)	27.6 (16)
	40001–60000	0 (0)	27.6 (16)
	60001+	16.7 (1)	17.2 (10)
AUDIT <sup>f</sup>	No alcohol problem	83.3 (5)	71.7 (43)
	Hazardous drinking	0 (0)	21.7 (13)
	Alcohol dependency	16.7 (1)	6.7 (4)

<sup>a</sup>Potosky, D. (2007);

<sup>b</sup>Andresen, E. M., Malmgren, J. A., Carter, W. B., & Patrick, D. L. (1994);

<sup>c</sup>Cohen, S., Kamarck, T., & Mermelstein, R. (1983);

<sup>d</sup>Emlet, C. A. (2005);

<sup>e</sup>Wong, M. D., Sarkisian, C. A., Davis, C., Kinsler, J., & Cunningham, W. E. (2007);

<sup>f</sup>Saunders, J. B., Aasland, O. G., Babor, T. F., de la Fuente, J. R., & Grant, M. (1993)