



Published in final edited form as:

*AIDS Care*. 2017 March ; 29(3): 319–325. doi:10.1080/09540121.2016.1224298.

## Social Support, Depression and Quality of Life among People Living with HIV in Guangxi, China

**Zhiwen Xiao,**

Valenti School of Communication, University of Houston, 101 Communication Bldg, Houston

**Xiaoming Li,**

University of South Carolina Arnold School of Public Health, Columbia, SC

**Shan Qiao,**

University of South Carolina Arnold School of Public Health, Columbia, SC

**Yuejiao Zhou,** and

Guangxi Center for Disease Control and Prevention, Nanning 530028, Guangxi, China

**Zhiyong Shen**

Guangxi Center for Disease Control and Prevention, Nanning 530028, Guangxi, China

### Abstract

This study collected data from 2987 people living with HIV in China and employed structural equation modeling to examine the relationships among social support, depression, and quality of life (QOL).

Depression was the strongest predictor of the psychological, energy and mobility aspects of QOL with  $\beta = -.70$  ( $p < .001$ ),  $\beta = -.47$  ( $p < .001$ ) and  $\beta = -.44$  ( $p < .001$ ) respectively. Emotional social support was a significant predictor of depression ( $\beta = -.12$ ,  $p < .001$ ), mobility ( $\beta = .20$ ,  $p < .001$ ), energy ( $\beta = .15$ ,  $p < .001$ ) and psychological aspect ( $\beta = .06$ ,  $p < .05$ ). Informational social support was a significant predictor of mobility ( $\beta = -.08$ ,  $p < .01$ ), energy ( $\beta = -.06$ ,  $p < .05$ ), and psychological aspect ( $\beta = -.07$ ,  $p < .001$ ). Functional social support was only negatively associated with mobility ( $\beta = -.16$ ,  $p < .01$ ).

Therefore, depression had a negative effect on physical (perceived mobility and energy) and psychological (positive/negative feelings, thinking, learning, memory and concentration) aspects of QOL. Emotional social support had both direct and indirect effect (through its buffering effect on depression) on better QOL. However, the association between informational social support and the three aspects of QOL were negative; and informational social support did not have buffering effect on depression. Functional social support was negatively associated with mobility, which means provision of functional support to PLHIV may not necessarily be associated with better QOL. The findings confirm that HIV/AIDS care in China should consider the conceptual differences between emotional, informational and functional support.

## Keywords

social support; depression; quality of life; HIV; China

The number of people living with HIV (PLHIV) continues to increase in China. National HIV Surveillance data indicate that newly-diagnosed HIV cases have been increasing from 10,742 in 2007 to 39,183 in 2011 (Ministry of Health of China, 2012). As of 2013 there were a reported 437,000 PLHIV in China (UNAIDS, 2014). Quality of life (QOL) has become an important aspect in the overall health and well-being of PLHIV (Jia, Uphold, Wu, Chen, & Duncan, 2005; Oetzel et al., 2014). The World Health Organization (WHO) defines quality of life as ‘individuals’ perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns’ (WHOQOL Group, 1995). Quality of life (QOL) includes various dimensions such as global health perspectives, symptom status, functional status, biological and physical variables, individual and environmental characteristics, and general health perceptions (Wilson & Cleary, 1995).

It is critically important to identify variables associated with QOL among PLHIV. Research has established a link between perceived social support and QOL among PLHIV (Bastardo & Kimberlin, 2000; Bekele et al., 2013; Jia et al., 2007; Liu et al., 2006; Viswanathan, Anderson, & Thomas, 2005). Social support is defined as ‘the general or specific supportive behavior from people in the social network’ (Cullen, 1994, p.530) or the informational, psychological, and functional resources provided by one’s social network (Cohen & McKay, 1984; MacGeorge, Feng, & Burlison, 2011). Therefore, social support can be categorized into informational (e.g., provision of information or advice), emotional (e.g., caring, empathy), and functional/tangible support (e.g., financial or tasks assistance) (Cohen & McKay, 1984; Thoits, 1986). Social support can improve individuals’ social adaptability and coping ability in an adverse environment (Cullen, 1994).

According to Cohen and Wills (1985), social support can influence health through two models: the main/direct effects model and the stress-buffering model. In the main/direct effect model, social support influences one’s health directly. That is, higher social support is directly related to greater QOL or lack of social support is directly associated with low level of QOL (Herzer, Zeller, Rausch, & Modi, 2011). In the stress-buffering model, social support is supposed to have indirect effect on health by preventing stressors or reducing the severity of stressors. The extant literature has identified that higher social support has been linked to low levels of depression (McDowell & Serovich, 2007), which in turn, is associated with better QOL (Burgoyne & Renwick, 2004; Jia, Uphold, Wu, Chen, & Duncan, 2005; Stewart, Cianfrini, & Walker, 2005; Vyavaharkar et al., 2011). Therefore, perceived social support contributes to better QOL also through its indirect/buffering effect on depression.

The relationships between social support, depression and QOL and between drug use, depression and QOL among different types of populations have been documented in the literature (Jia et al., 2005; Xu & Qu, 2014). Nevertheless, limited studies have focused on these associations among PLHIV in China. Therefore, the purpose of this study was to

examine the relationships between social support, drug use, depression and quality of life in a sample of PLHIV in China. Based on the findings in the existing literature, we hypothesized that social support (including functional, emotional and informational support) would be related to better QOL and lower depression which in turn is related to higher QOL. Figure 1 presents the relationship model.

## Methods

### Study site

The current study was conducted from October 2012 to August 2013 in Guangxi Autonomous Region, which has ranked second in terms of HIV seropositive cases among 31 provinces in China (Guangxi CDC, 2011). Two cities and 10 counties that had the largest cumulative number of reported HIV/AIDS cases were selected for the study. There were a total of 29,606 HIV/AIDS cases in these selected 12 sites, comprising 43% of all the reported cases in Guangxi at the time of the study.

### Participants and sampling

The research team randomly selected about 10% of the reported cases in each site. The individuals selected were 18 years old or above and physically and mentally able to complete a survey. Health care workers and staff members in each local CDC and community health centers made phone calls and home visits to reach out the selected participants. Approximately 90% of the selected participants consented and participated in the survey (n=3,002). A total of 2,987 participants were included in the data analysis after removing 15 uncompleted questionnaires.

### Survey procedure

The survey was administered in local CDC or HIV clinics where the participants received medical care. Majority of the participants completed the questionnaire one-on-one with the interviewers and only about 20% completed the questionnaire on their own. Prior to survey conduction, all the interviewers (i.e., local CDC staff or health care workers from HIV clinics) received intensive training on research ethics and interview skills with PLHIV. The survey took about 75-100 minutes. Each participant received a gift as a token of appreciation after they completed the survey. The research protocol was approved by the Institutional Review Boards at both Wayne State University in the United States and Guangxi CDC in China.

### Measures

**Social Support** was assessed with a modified version of the Medical Outcomes Study Social Support Scale (MOS-SSS) (Sherbourne & Stewart, 1991). A total of 28 items were adapted for use. Factor analysis was conducted to categorize the items into three factors: functional, emotional and informational social support. Sample questions of functional social support included “Someone would help me if I were confined to bed” and “Someone would help with daily chores if I were sick.” Sample questions of emotional social support included “When I need to talk I can count on someone to listen to” and “Someone would show me love and affection when I need it.” Sample questions of informational support

included “Someone would communicate with me about HIV transmission when I need it.” Responses range from 1=almost none to 5=almost always.

**Depression** was adapted from the CES-D scale that consisted of 20 items (Radloff, 1977) to assess depressive symptoms in the general population. The current study employed 8 items. Sample questions included “I was bothered by things that usually don’t bother me during the past week” and “I felt fearful during the past week” and “My sleep was restless during the past week.” Responses range from 1=rarely or none of the time (less than 1 day) to 4=most or all of the time (5-7 days).

**Quality of Life** was adapted from the WHOQOL-BREF scale (WHOQOL-BREF, 1996). This original instrument includes 24 items from physical, psychological, social and environmental domains. Physical domain incorporated facets such as activities of daily living, energy and fatigue, mobility and others. The psychological domain includes facets such as negative and positive feelings, thinking, learning, memory and concentration. Social relationships incorporate personal relationships, social support and sexual activity. And the environment domain includes financial resources, freedom, physical safety and security, home environment and others.

The current study included physical and psychological domains. The physical domain asks questions related to energy and fatigue as well as mobility. However, the set of questions measuring energy and fatigue (5 items) and the set of questions of mobility (4 items) were treated as separate latent variables in the structural equation modeling because different response scales were used for them. Sample questions for measuring energy and fatigue included “In the last month, how often did you feel energetic” and “In the last month, how often did you feel fatigue?” Response options range from “1=all the time” to “5=never.” Sample questions for measuring mobility and activities of daily living included “In the past month, how much did you feel you have problems with doing things such as standing or bending?” Response options range from “1=a lot” to “3=none.”

The psychological domain asks questions related to negative/positive feelings, self-esteem, thinking, learning, memory and concentration (11 items). Sample questions included “In the last month, how often were you unable to concentrate?” Response options range from “1=all the time” to “5=never.”

## Data Analysis

Structural equation modeling (SEM) was used to test the conceptual model depicted in Figure 1. Specifically, a two-step modeling approach was used. The first step involved testing and respecifying confirmatory factor analysis (CFA) models for each major latent variable to ensure that the proposed factor solution was adequate. After the CFA models were deemed acceptable, the second step was to compare the fit of the original structural models to alternative models.

Model fit was based on the chi-square goodness-of-fit test, the comparative fit index (CFI), and the root mean square error of approximation (RMSEA). A non-significant chi-square indicates a very good fit. The value for acceptable fit for the CFI should be above .90. Values

for the RMSEA have to be less than .05 to indicate a close model fit, but values in the range of .05 to .08 are considered acceptable. The computer program AMOS 22 was used to analyze the data.

## Results

### Descriptive Statistics

A total of 2987 PLHIV participated in the study, among whom 1876 (62.8%) were males and 1111 (37.2%) were females. The mean age was 42.46 (SD=12.83). About half of the study population (n=1616, 54.3%) belonged to the age group of 31 to 45 years. Majority (n=2584, 86.8%) had less than 9 years of schooling. A total of 1320 (44.2%) reported that they were infected through sexual behavior with regular or casual partners (e.g., one-night stand) and 471 (15.8%) through sharing needles with others for drug use. Five hundred and seventy-five (19.3%) reported that they had ever used drugs. And 2146 (72.1%) are under antiretroviral therapy treatment (ART). Table 1 presents descriptive data on demographic characteristics of the participants.

### Confirmatory Factor Analysis

Social support, depression, and the three aspects of quality of life were treated as latent variables. Confirmatory factor analysis was conducted for each latent variable. All latent variables' factor loadings were greater than .50 for all models. The Cronbach's Alphas for latent variables range from .72 to .97. Table 2 presents descriptive data on these latent variables.

### Structural Model Analyses

The proposed structural model produced a significant chi-square ( $\chi^2=26925.16$ ,  $df=1577$ ,  $p<.001$ ). The values of the selected fit indices were: CFI=.84 and RMSEA=.073 (95%CI: .073,.074). The Beta weights for the paths between informational social support and depression, functional social support and depression, functional social support and psychological domain of quality of life, functional social support and energy aspect of quality of life were not statistically significant, and these paths were deleted from the model. And according to modification indices, several pairs of error terms of latent variables were allowed to be correlated. The final model produced fit indices of:  $\chi^2=16502.86.30$  ( $df=1569$ ,  $p<.001$ ), CFI=.904, RMSEA=.056 (95% CI: .056-.057).

Depression was the strongest predictors of the three aspects of quality of life, with  $\beta=-.70$  ( $p<.001$ ),  $\beta=-.47$  ( $p<.001$ ) and  $\beta=-.44$  ( $p<.001$ ) for the psychological, energy and mobility aspects respectively. Emotional social support was significant predictors of depression ( $\beta=-.12$ ,  $p<.001$ ), mobility ( $\beta=.20$ ,  $p<.001$ ), energy aspect ( $\beta=.15$ ,  $p<.001$ ) and psychological aspect ( $\beta=.06$ ,  $p<.05$ ). Informational social support was significant predictors of mobility ( $\beta=-.08$ ,  $p<.01$ ), energy ( $\beta=-.06$ ,  $p<.05$ ), and psychological aspect ( $\beta=-.07$ ,  $p<.001$ ). Functional social support was only a significant predictor of mobility ( $\beta=-.16$ ,  $p<.01$ ). However, informational and functional social support were not predictors of depression. Therefore, our hypotheses, which propose that social support (including functional, emotional and informational social support) is related to higher QOL and lower depression

(which in turn is related to higher QOL), were only partially supported. Figure 2 presents beta weights of significant paths.

## Discussion

The present study investigated the relationships between social support, depression and quality of life in a sample of people living with HIV in Guangxi, China. Several points are noteworthy. First, depression had a negative effect on physical (such as perceived mobility and perceived energy) and psychological aspects of quality of life. This is consistent with most previous studies (e.g., Burgoyne & Renwick, 2004; Jia et al., 2005; Stewart et al., 2005). The results imply that the more the PLHIV felt depressed the more likely they reported lower levels of quality of life in the aspects of mobility, energy and fatigue, positive/negative feelings as well as thinking, learning, memory and concentration. Therefore, it is essential important in HIV/AIDS care in China to early detect and effectively treat depression among individuals affected by the HIV epidemic in order to improve their quality of life.

Second, emotional social support was negatively associated with depression, which means the more emotional social support the participants received, the more likely they perceived lower levels of depression. In addition, emotional social support was positively related to mobility, energy and fatigue and psychological feelings, indicating the more emotional social support the participants received, the more likely they would perceive higher levels of physical and psychological aspects of QOL. Therefore, for the Chinese PLHIV sampled in Guangxi, emotional social support has both direct influence on better QOL and indirect effect on better QOL through its buffering effect on depression. This finding is consistent with the extant literature that links social support directly and indirectly to better QOL (Burgoyne & Renwick, 2004; Herzer, Zeller, Rausch, & Modi, 2011; Jia et al., 2005; Stewart, Cianfrini, & Walker, 2005). Therefore, HIV/AIDS care in China needs to include emotional social support, which can be provided by family members, friends, co-workers, and health professionals, to improve the quality of life of people affected by the HIV epidemic.

Third, the relationship was not significant between functional social support and the psychological and energy aspects of QOL examined in the current study. Functional social support was only negatively associated with mobility. This means provision of functional support to PLHIV may not necessarily be associated with better QOL. Rather, it may mean the functional social support participants received made them perceive that they were weak and lack of mobility. Finally, informational social support had direct effects on the physical and psychological aspects of QOL examined in the study. However, the associations were all negative. That is, the more information the participants received about HIV transmission and treatment, the more likely they would have negative feelings about themselves and perceive lower levels of mobility and energy. In addition, informational social support was not associated with depression as hypothesized. Therefore, informational social support did not have buffering effect on depression as hypothesized.

These findings are not consistent with results of previous studies that associated social support directly and indirectly with better QOL (e.g., Burgoyne & Renwick, 2004; Herzer et al., 2011; Jia et al., 2005). One possible explanation for the negative associations is that informational and functional social support might have provoked participants' resistance to HIV-related health regimens or undermined their self-efficacy (Goldsmith, 2004) because "advice about a health problem could turn out to be uninformed, critical, or condescending, and even well-intentioned efforts can produce relational conflict or increase uncertainty" (Goldsmith & Albrecht, 2011, p.337). These results also make us consider whether there was an optimal match between the needs of support seekers and the providing of functional support, and whether support information was truly targeted towards or tailored to PLHIV's needs. Future research should investigate the need of Chinese PLHIV for information and develop tailored support information or interventions for these people. In addition, we also need to consider the nature of the information and the way in which it was delivered to the study participants. Some previous studies found that written information was not always helpful for patients and personal approach could be better (Richardson, Plant, Moore, Medina, Cornwall & Ream, 2007). However, it is not clear about these important issues in the current study. Therefore, future research needs to examine whether the nature of the information and the way it is given is appropriate. Furthermore, the quality of the information can be very different if delivered by different messengers (such as lay person or professionals) and channels. Future research needs to study whether quality or at the right level information is delivered to PLHIV.

Our study has some limitations. First, this is a cross-sectional study that collected QOL data at a single time point. Second, the study did not use the same response scale for measuring physical and psychological aspects of quality of life. Therefore, we could not calculate the total score of QOL for the study population. Despite these limitations, the findings of our study add to current understanding of ways through which social support affects physical and psychological QOL. Our results confirm the conceptual differences between emotional, informational and functional social support. Especially, the role of emotional social support is substantial in coping depression and improving quality of life. These findings reinforce the crucial role that perceived emotional social support can play in improving QOL of people living with HIV. Also, optimizing QOL among those ART patients is said to be very essential to achieve high levels of adherence (Wu, 2000). Therefore, it would be wise to incorporate emotional social support in interventions targeting or tailoring PLHIV in China. Informational and functional social supports were not associated with QOL and depression as proposed. More studies need to investigate the nature and quality of support information and the way it is given to PLHIV in China. Future research also needs to develop tailored or targeted information for this population.

## Acknowledgments

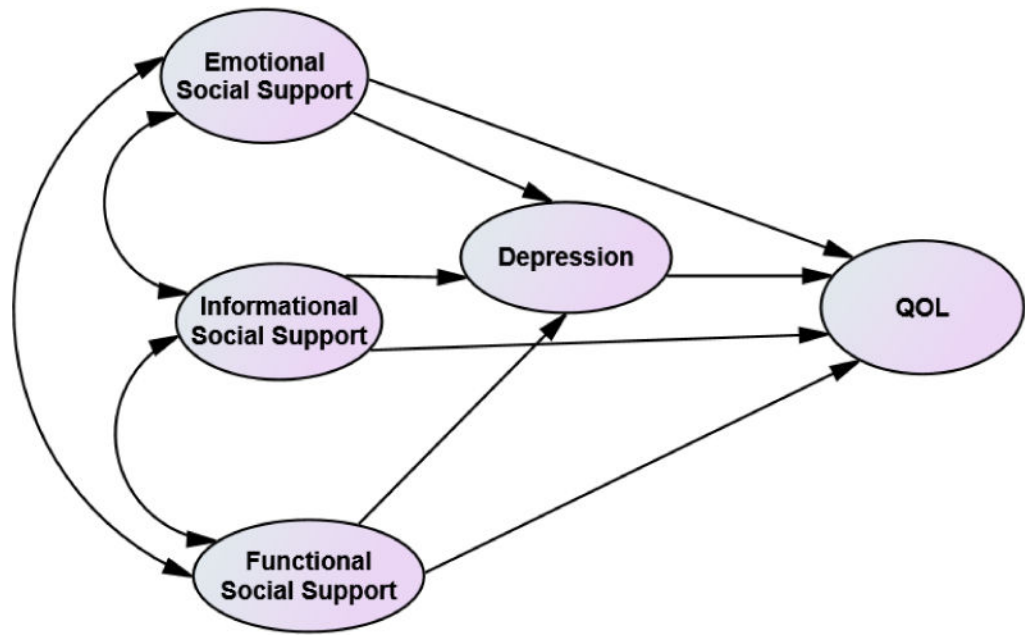
The study was supported by NIAAA grant (R01AA018090) and NICHD grant (R01HD074221). The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institute of Health.

## References

- Bastardo YM, Kimberlin CL. Relationship between quality of life, social support and disease-related factors in HIV-infected persons in Venezuela. *AIDS Care*. 2000; 12:673–684. [PubMed: 11218552]
- Bekele T, Rourke SB, Tucker R, Greene S, Sobota M, Koornstra J, The Positive Spaces Healthy Places Team. Direct and indirect effects of perceived social support on health-related quality of life in persons living with HIV/AIDS. *AIDS Care*. 2013; 25(3):337–346. [PubMed: 22774876]
- Burgoyne R, Renwick R. Social support and quality of life over time among adults living with HIV in the HAART era. *Social Science & Medicine*. 2004; 58:1353–1366. [PubMed: 14759681]
- China Ministry of Health. China AIDS response progress report. Beijing: China Ministry of Health; 2012. Available: [http://www.unaids.org/en/dataanalysis/knowyourresponse/countryprogressreports/2012countries/ce\\_CN\\_Narrative\\_Report\[1\].pdf](http://www.unaids.org/en/dataanalysis/knowyourresponse/countryprogressreports/2012countries/ce_CN_Narrative_Report[1].pdf)
- Cohen S, McKay G. Social support, stress and the buffering hypothesis: A theoretical analysis. In: Baum A, Singer JE, Taylor SE, editors *Handbook of psychology and health*. Vol. 4. Hillsdale, NJ: Erlbaum; 1984. 253–267.
- Cohen S, Wills TA. Stress, social support, and the buffering hypothesis. *Psychological Bulletin*. 1985; 98:310–357. [PubMed: 3901065]
- Cullen FT. Social support as an organizing concept for criminology: Presidential address to the academy of criminal justice sciences. *Justice Quarterly*. 1994; 11:527–559.
- Goldsmith DJ. *Communicating social support*. Cambridge, England: Cambridge University Press; 2004.
- Goldsmith DJ, Albrecht TL. Social support, social networks, and health: A guiding framework. In: Thompson TL, Parrott RP, Nussbaum JF, editors *The Routledge handbook of health communication*. Routledge: Taylor & Francis; Group: 2011. 335–348.
- Herzer M, Zeller MH, Rausch JR, Modi AC. Perceived social support and its association with obesity-specific health-related quality of life. *Journal of Developmental & Behavioral Pediatrics*. 2011; 32(3):188–195. [PubMed: 21263350]
- Jia H, Uphold C, Wu S, Chen G, Duncan P. Predictors of changes in health-related quality of life among men with HIV infection in the HAART era. *AIDS Patient Care & STDs*. 2005; 19:395–405.
- Jia H, Uphold CR, Yu Z, Wu S, Chen G, Findley K, Duncan PW. A further investigation of health-related quality of life over time among men with HIV infection in the HAART era. *Quality of Life Research*. 2007; 16:961–968. [PubMed: 17468942]
- Liu C, Johnson L, Ostrow D, Silvestre A, Visscher B, Jacobson LP. Predictors for lower quality of life in the HAART era among HIV-infected men. *Journal of Acquired Immune Deficiency Syndrome*. 2006; 42:470–477.
- MacGeorge EL, Feng B, Burleson BR. Supportive communication. In: Knapp ML, Daly JA, editors *The Sage handbook of interpersonal communication*. Thousand Oaks, CA: Sage; 2011. 317–354.
- McDowell TL, Serovich JM. The effect of perceived and actual social support on the mental health of HIV-positive persons. *AIDS Care*. 2007; 19:1223–1229. [PubMed: 18071966]
- Oetzel J, Wilcox B, Archiopoli A, Avila M, Hell C, Hill R, Muhammad M. Social support and social undermining as explanatory factors for health-related quality of life in people living with HIV/AIDS. *Journal of Health Communication*. 2014; 19:660–675. [PubMed: 24479678]
- Richardson A, Plant H, Moore S, Medina J, Cornwall A, Ream E. Developing supportive care for family members of people with lung cancer: A feasibility study. *Support Care Cancer*. 2007; 15(11):1259–1269. DOI: 10.1007/s00520-007-0233-z [PubMed: 17333293]
- Sherbourne CD, Stewart AL. The MOS social support survey. *Social Science & Medicine*. 1991; 32(6):705–714. DOI: 10.1016/0277-9536(91)90150-B [PubMed: 2035047]
- Stewart KE, Cianfrini LR, Walker JF. Stress, social support and housing are related to health status among HIV-positive persons in the Deep South of the United States. *AIDS Care*. 2005; 17:350–358. [PubMed: 15832883]
- Thoits PA. Social support as coping assistance. *Journal of consulting & clinical psychology*. 1986; 54:416–423. [PubMed: 3745593]



- UNAIDS. 2014 China AIDS response progress report. 2014. Available from [http://www.unaids.org/sites/default/files/documents/CHN\\_narrative\\_report\\_2014.pdf](http://www.unaids.org/sites/default/files/documents/CHN_narrative_report_2014.pdf)
- Viswanathan H, Anderson R, Thomas I. Nature and correlates of SF-12 physical and mental quality of life components among low-income HIV adults using an HIV service center. *Quality of Life Research*. 2005; 14:935–944. [PubMed: 16041891]
- Vyavaharkar M, Moneyham L, Corwin S, Tavakoli A, Saunders R, Annang L. HIV-disclosure, social support, and depression among HIV-infected African American women living in the rural Southeastern United States. *AIDS Education and Prevention*. 2011; 23(1):78–90. [PubMed: 21341962]
- WHOQOL-BREF. Field Trial version. Geneva: WHO; 1996. Introduction, Administration, scoring and generic version of the assessment. [http://www.who.int/mental\\_health/media/en/76.pdf](http://www.who.int/mental_health/media/en/76.pdf)
- WHOQOL Group. The World Health Organization Quality of Life assessment (WHOQOL): position paper from the World Health Organization. *Social Science & Medicine*. 1995; 41:1403–1409.
- Wilson IB, Cleary PD. Linking clinical variables with health-related quality of life. A conceptual model of patient outcomes. *Journal of the American Medical Association*. 1995; 4(273):59–65.
- Wu AW. Response to Stewart and Nápoles-Springer: Quality-of-life assessment in clinical research. *Medical Care*. 2000; 38(Suppl 9):II-130–II-135.
- Xu J, Ou L. Resilience and quality of life among Wenchuan earthquake survivors: the mediating role of social support. *Public Health*. 2014; 128:430–437. DOI: 10.1016/j.puhe.2014.03.002 [PubMed: 24792190]



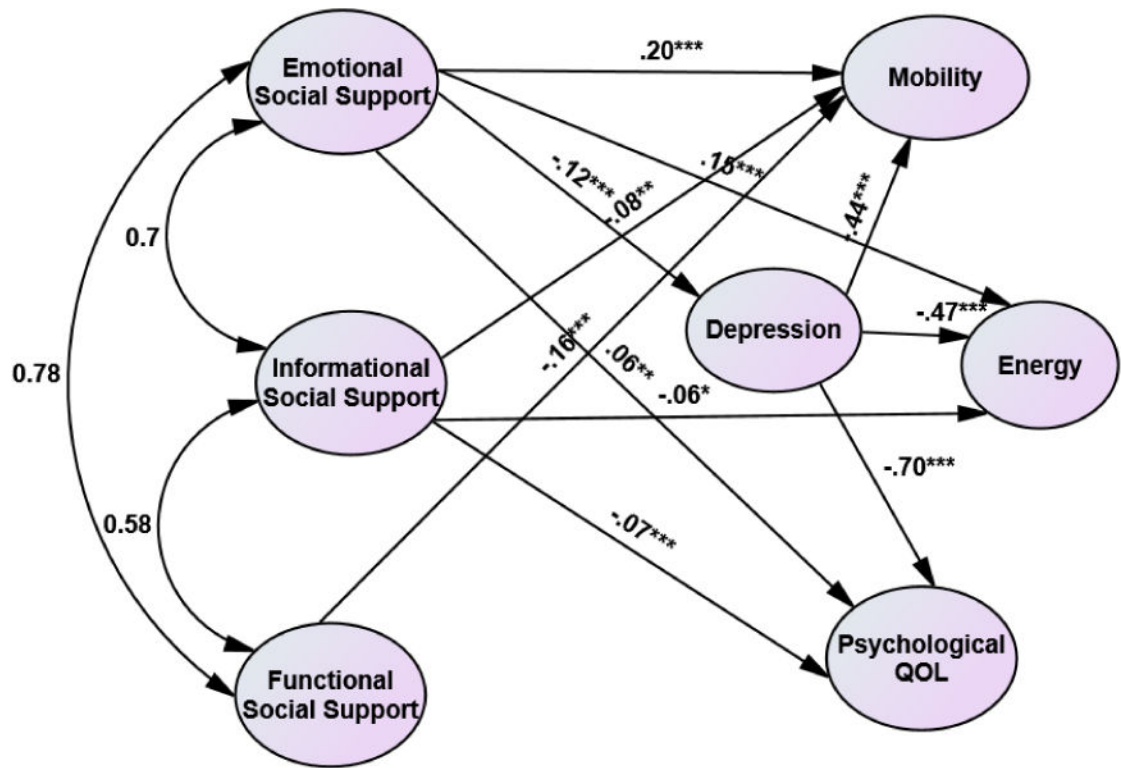
**Figure 1.**  
Conceptual Model of Social Support, Depression and Quality of Life

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript



**Figure 2.**  
Beta weights of Significant Paths

**Table 1**

## Demographic Characteristics of Participating PLHIV

Characteristics	Frequency	Percentage
<b>Age</b> (M=42.46, SD=12.83, Range=17-88)		
17-30 years	391	13.15
31-45 years	1616	54.34
>45 years	967	32.52
<b>Sex</b>		
Male	1876	62.8
Female	1111	37.2
<b>Ethnicity</b>		
Han	2109	70.7
Others	873	29.3
<b>Place of identity registration</b>		
City	206	6.9
County	259	8.7
Town	412	13.8
Countryside	2107	70.6
<b>Place of residence</b>		
City	290	9.7
County	301	10.1
Town	381	12.8
Countryside	2010	67.4
<b>Years of Schooling</b>		
<=6 years	1335	44.8
6-9 years	1249	42
>9 years	393	13.2
<b>Employment</b>		
Unemployed	800	26.9
Part Time	992	33.4
Full Time	1182	39.7
<b>Marital Status</b>		
Single	331	11.3
Concubine	72	2.5
Married	1939	66.5
Separated/Divorced/Widowed	575	19.7
<b>Monthly Household Income</b> (Chinese Yuan)		
0-999	1572	53.1
1000-1999	870	29.4
>2000	516	17.4
<b>HIV Duration</b> (M=2.91, SD=2.42, Range=0-14)		
<=3 years	1942	65.2

<b>Characteristics</b>	<b>Frequency</b>	<b>Percentage</b>
4-7 years	904	30.4
>7 years	132	4.4
<b>ART</b>		
Yes	2146	72.1
No	830	27.9
<b>Transmission Routs</b>		
Sexual behavior with regular partners	852	28.5
Sexual behavior with casual partners	468	15.7
Commercial sex	642	21.5
Blood product/surgery	30	1
Sharing needles for drug use	471	15.8
Other	24	.8
I don't know	487	16.3
<b>Ever Drug Use</b>	575	19.3
<b>Ever Injected Drugs</b>	504	16.8
<b>Ever Used New Drugs</b>	118	20.7

**Table 2**

Descriptive statistics of the three main latent variables

	Mean	Standard Deviation	Cronbach's Alpha
<b>Social Support</b>			
Emotional	2.47	.91	.97
Informational	1.96	.89	.90
Functional	2.64	1.00	.93
<b>Depression</b>	1.68	.64	.84
<b>Quality of Life</b>			
Energy	3.36	.72	.72
Mobility	2.44	.56	.92
Psychological QOL	3.76	.75	.93

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript