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# Factors Associated with Depression Among Male Casual Laborers in Urban Vietnam

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**Abstract** This study examined the level, the prevalence of and the factors associated with depression among male casual laborers in Hanoi. Social mapping was done to recruit and interview 450 men aged over 18 years, mostly unskilled and unregistered laborers from 135 street venues across 13 districts of the city using a structured questionnaire. Most were from rural and mountainous provinces and did manual works such as motorbike taxi drivers, porters, construction workers, small traders and others in the current city. The prevalence of self-reported depressive symptoms (25 %) was high. Structural equation modeling showed that marriage, family separation and living with peers or partners were three significant distal risk factors, while illicit drug use and low social connectedness were proximal predictors of depression. Of all factors, social connectedness appeared to be the most important because it plays a mediating role. Drug use was an independent risk factor. This study provides a model to understand the mental health of male casual laborers and to develop culturally appropriate intervention programs for these men.

**Keywords** Depression · Mental health · Male casual laborers · Structural equation modeling (SEM) · Vietnam

## Introduction

Vietnam adopted an economic renovation policy in the 1980s. With this initiative, the country has been significantly moving from a centrally planned economy to one of market orientation and has achieved unprecedented economic successes (Duong et al. 2005). At the same time, this process has created a growing challenge for the government in dealing with a widening rich-poor gap (Duong et al. 2005). As a result, there have been two emerging trends of activity by the poor. One is to engage in physically demanding jobs called “unskilled, unregistered labor” because of their lower social status. The other is to migrate from rural to urban areas searching for better livelihood, yet because of low levels of education and skills, they also have few options other than to undertake labor-intensive jobs. While this workforce is contributing significantly to city industry, many people are living an increasingly socially marginalized and excluded life. According to Duong et al. (2005), there are far more male than female freelance laborers joining this workforce in urban areas. It was found that most of these men performed manual and casual work in the streets and were paid a very low wage and lived in poor conditions (Huy et al. 2011). Because men are socially expected to be breadwinners of the families they are under pressure to earn enough for their families. Failure to do so may expose them to social and psychological problems.

To identify specific health problems and the factors that may determine them among male casual laborers, we conducted a qualitative study into the life experiences and

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social contexts of these men (Huy et al. 2012). It has been found that one of the main health problems among these men was distress. While living and working in the urban setting, they faced a variety of difficult life situations that contributed to poor mental health, including financial crisis, maltreatment by employers, separation from family and social networks, exposure to crime, loss of property, bad living conditions, and sickness. Even in some stressful situations, coping strategies among these men were in the form of visiting and having unsafe sex with commercial sex workers. The social contextualization and conceptualization of vulnerabilities to mental health problems among male casual laborers in urban Vietnam has a complex reality and should merit more attention to research and social services. Unfortunately, to date there has been little research into mental health among this population in Vietnam and similar context. Key literature and results from previous studies are briefly discussed below to inform a conceptual framework for the current study.

### Socioeconomic Status and Depression

There is substantial evidence from developed and developing countries that lower socioeconomic status (SES) is associated with increased occurrence of mental ill-health. Some research in general populations indicates that people subjects with low SES were more likely to be depressed than those with higher SES (Molarius et al. 2009). The nature of this relationship appears to be evident in the subgroup of rural-to-urban migrants. Gresenz and colleagues found that mental health status was inversely related to SES among migrants (Gresenz et al. 2001) perhaps because people with lower SES face a wide range of stressful life events and have limited access to resources and supports to deal with crises (Huy et al. 2012). This may be due to lower levels of education (and fewer skills) preventing them from accessing employment opportunities, far from their rural families, familiar culture and social networks, many are forced to live in slums and work long hours without social welfare entitlements (Mou et al. 2011). Moreover, they are frequently marginalized in urban communities and other experience of discrimination (Li et al. 2007) and even maltreated (Huy et al. 2012).

### Social Support and Depression

The relationship between social support and depression has been well established (Chou 2009; Fagg et al. 2008). Buffer effect theory suggests that social support acts as a buffer to environmental stresses, which may decrease one's susceptibility to mental illness (Qiu et al. 2011). In many cases, moving from one place to another to live and work means attenuation or loss of an individual's old social network (Qiu et al. 2011). It appears therefore that migration for work

places individuals at higher risk of mental distress or disorders. Yet, measuring social support is at times inconsistent as different studies may use different scales to measure social capital, social network, social support, social connectedness or other constructs. Harpham et al. argued that using a quantitative measure helps researchers to test for significant associations between social capital and health outcomes (e.g. physical and mental morbidity). It is also important to differentiate social capital from social networks and informal and instrumental support. Social capital is largely a feature of the social structure, not of the individual actors within the social structure and researchers should therefore balance between theoretical relevance and practical feasibility in measuring this domain (Harpham 2008). According to Hawthorne et al., there are two components of the social capital—structural and cognitive. The former refers to the extent and intensity of associational links or “what people do”, while the latter covers perceptions of support, reciprocity, sharing and trust or “what people feel” (Harpham et al. 2002). If researchers, for some reasons, can not include both components for measuring this domain, it is helpful to consider at least the latter scale. Based on the literature, the scale of social connectedness of Hawthorne can be used to measure the extent to which an individual perceives or feels he/she is networked or connected with the society (Hawthorne 2006). The social connectedness scale is an indicator of “cognitive social capital” (Harpham 2008).

### Other Factors

Several studies have reported that duration of migration is associated with depression (Kim et al. 2005). They found that the longer migrants stay in new environment, the better they can adapt. Contributing factors to depression—either directly or indirectly—may include higher age (Raval et al. 2010; Wurff et al. 2004), gender inequality (Leavey et al. 2007), ethnic origin (Wurff et al. 2004), manual labor other than service work or self-employment (Wong et al. 2008), being unmarried (Wong et al. 2008) or living alone (Barua et al. 2010), sexual orientation (Leavey et al. 2007), higher consumption of alcohol (Leavey et al. 2007) and illicit drug use (Espada et al. 2011).

The purpose of this study was to examine the symptom of depression and the factors associated with depression among male casual laborers in Hanoi, Vietnam.

## Methods

### Design and Site

This study adopted a survey method with structured face-to-face interviews of male casual laborers in the city of

Hanoi. Hanoi is located in northern region of Vietnam, situated in the country's Red River delta, nearly 90 km away from the coastal area. It contains three basic kinds of terrain, which are the delta area, the midland area and mountainous zone. In the past, Hanoi has about only ten districts, but now it is divided into 12 urban districts, one district-level town and 17 rural districts because of its rapid urbanization. With more than six million residents with very diverse living conditions and its large area, Hanoi has much in common with megacities in developing countries such as Beijing, Shanghai, Mumbai, Jakarta, and Bangkok. It is more than 1,000 years of age and is one of the largest host cities for internal migrants and male casual laborers in Vietnam (General Statistical Office 2010).

### Sampling and Data Collection

Sampling male casual laborers in cities like Hanoi is methodologically challenging, because sampling frames are not available. This population is mostly unskilled, unregistered and very mobile. In this study, we applied a strategy called "social mapping" (Cramb and Purcell 2001) to generate an optimal number of sites at which male casual laborers could be recruited. In each district, trained field researchers traveled to places, typically in streets, markets, construction sites, transport stations, tourist spots, or by schools, hospitals, and factories, where men congregated in search of casual employment. By the end of this exercise, a list of sites (135 across 13 city districts) was generated and a total number of possible participants was estimated.

Potential participants were screened if they were male, aged 18–59 years, and sought casual jobs or worked on the street, and they were not interviewed during the qualitative and pilot phase of this study. Eligible participants were introduced to the objectives and key contents of the research, and then field researchers asked respondents who provided informed consents all the questions in the questionnaire. According to their wishes, participants were interviewed in places that supported the privacy including in their homes, in researchers' houses, at their workplaces, or at the field sites where they sought jobs. After interviews, field researchers provided respondents with key information on how to prevent HIV infection and transmission if requested.

The refusal rate was 5 %. In total, 450 eligible participants with fully informed consents completed interviews. Each man completed a face-to-face, confidential interview (about 30–45 min) and received \$10 compensation upon completion. The interviews took place within late 2010 to early 2011 and were done by well trained field researchers.

### Survey Questionnaire and Measures

The English short version of the depression scale by Radloff (1977) was translated into Vietnamese and independently back-translated into English. A comparison was made with no significant difference found between the two versions. It was then field-tested with 55 participants to assess face validity (wording and language) and internal consistency (Cronbach's alpha). The pilot showed that the questionnaire was technically feasible for the main survey.

### Dependent Variable

The Center for Epidemiology Studies Depression Scale (CES-D) (Radloff 1977) was evaluated. It measures the level of depressive symptoms within the previous week and contains 20 items rated on a 4-point scale of 0–3, from "rarely or none of the time" to most or all of the time. It has been used widely in general populations and specific subgroups, it has been administered to migrant workers (Qiu et al. 2011), the population relatively similar to male casual laborers. According to Joseph et al. (2006), the full 20-item scale was too burdensome and may not be appropriate to populations with low SES like migrant workers. Therefore, we used a short version "Boston form" with ten items because it was well validated among labor migrants (Joseph et al. 2006) and among male casual laborers in our pilot study. In this scale, two out of the ten items were positive mood items such as "You enjoyed life", "You are happy". Due to this positive direction, they were reversed and the final score was the sum of all item scores (to form a dependent variable), with higher scores indicating higher level of depression. The scale was of adequate internal consistency (Cronbach's alpha for the present study was .86). To assess the prevalence of depression, a cut-off score of ten points was used to minimize false positives with little loss of sensitivity as suggested by Boey (1999).

### Independent Variables

#### *Socio-Demographics*

Respondents were asked to report their age (years), marital status (married vs. unmarried), duration of family separation (number of months). A mobility index was evaluated as the ratio of the number of their migratory cities to the total number of migratory years (Li et al. 2004). Respondents were also asked to report their education level (number of years completed) and average income per month (in Vietnamese dong or VND). Social connectedness was assessed with 6 five-point items from Hawthorne (2006) with higher scores reflecting greater social connection ( $\alpha = .74$ ). This scale was utilized because it is

simple and appropriate in populations with minimal education as validated by Hawthorne (2006).

### Behavioral Variables

Respondents were asked about their living status (alone or with peers and partners), sexual orientation (prefer sex with women or with men or both), alcohol use (number of standard drinks consumed each day during the preceding week) (International Center for Alcohol Policies 2009), and lifetime illicit drug use (yes/no).

### Data Analysis

The survey data were analyzed by using the Statistical Package for the Social Sciences, version 18.0 (SPSS 2009). Bivariate associations with independent variables were assessed with Pearson correlation coefficients. Based on the literature review, we constructed a theoretical framework (Fig. 1) for the structural equation modeling (SEM). Of those independent variables, social connectedness was negatively related to depression, but according to the literature, it acts as a buffer between background variables (such as age, marital status, education level, etc.) and depression (Shin et al. 2006). At the same time, such background variables can have direct effect on depression. Independent variables were examined if there were significant covariances between pairs of them. Structural equations were conducted by AMOS, using the asymptotically distribution-free method. Standardized path coefficients, direct and indirect effects were presented. Chi square ( $\chi^2$ ) statistic, degrees of freedom (df) (Carmines and McIver 1981), the goodness of fit index (GFI), the normed fit index (NFI) (Bentler 1990), the comparative fit index (CFI), as well as the root mean square error of approximation (RMSEA) (Brown and Cudeck 1993) was used to evaluate the model fit. The statistical significance level was set at .05. To be fit, goodness-of-fit  $\chi^2$  should be not significant (i.e.  $p > .05$ ), the CFI ranges from 0 to 1, with .90 indicating acceptable fit and .80 indicating marginal fit (Bentler 1990), and the RMSEA ranges from 0 to  $\infty$ , with fit values  $<.05$  indicating close fit and less than .10 indicating fairly acceptable fit (Norman and Steiner 1997).

### Research Ethics

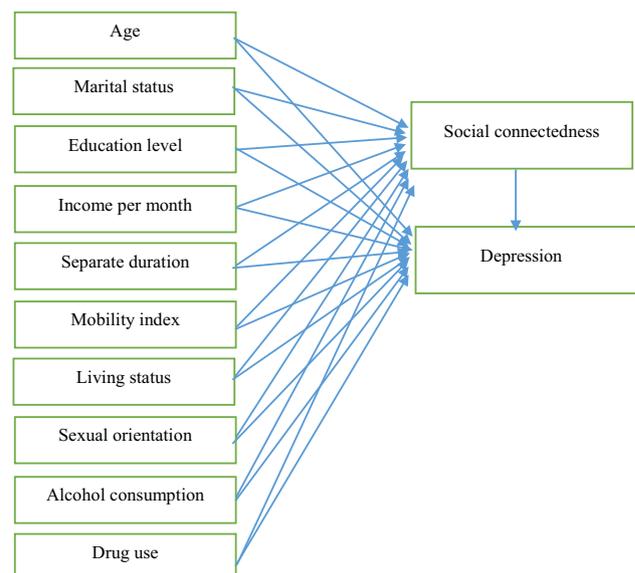
This study was approved by the Institutional Review Boards at Queensland University of Technology in Australia and Hanoi Medical University in Vietnam. Participation of all the respondents was anonymous and voluntary. They were informed about research contents and objectives as well as how the interview data would be documented and reported and that their confidentiality

would be respected. Participants provided verbal informed consent. The verbal consent was made because during the pilot study participants shared with researchers that they preferred a simple, verbal rather than written consent. This procedure was approved by the ethics committee.

## Results

### Socio-Demographic Characteristics

The mean age of the sample was 39 years. Among the 450 men, most were married (84 %), migrants (87 %) and Kinh ethnic (~99 %), which is quite in conformity with the demographic characteristic of Vietnam where majority of the populations are Kinh ethnic. The mobility index was relatively high (median = 4.5 cities per year of migration) and duration of family separation was long (median = 30 months). Most (~90 %) lived with peers, friends or sexual partners during the urban stay. The educational level of these men was low (mean years completed = 8) as compared with the national data showing that over 90 % of the Vietnamese general population completed high school (i.e., grade 12). Most (over 94 %) were manual workers in the city with an average income per month of around 2.6 million VND (USD\$124 or \$4 per day); in Vietnam, the salary per day per head in both business and state organizations ranges from about \$6 at minimum to \$100 at maximum. The men used a daily median number of alcohol standard drinks to more than two, equivalent to a moderate drinking; however, the rate of binge or addicted drinkers



**Fig. 1** Conceptual structural equation model of factors associated with depression

was quite high (21.1 %). Eight percent of the men indicated they were homo- or bi-sexual and more than 17 % had used illicit drugs at some stage in their lives. The socio-demographic characteristics show that these men lived a complex and socially marginalized life (Table 1).

### Depression Level

As shown in Table 2, depression levels were generally medium. Most of the individual item scores were under or equal to one, except for one item “I felt that everything I did was an effort” reaching a medium score of 1.5 (range = 0–3). The average score was  $7 \pm 5.16$  (range = 0–27). Despite a medium level of depression, more than 25 % of the men had scores equal to or greater than 10, highly suggestive of a clinical diagnosis of depression.

### Correlates Among the Model Variables

Intercorrelations between the scales utilized in the model estimation appear in Table 3. Age was significantly associated with four variables (marital status, education level, mobility and alcohol use); marital status with six variables (education level, family separation, mobility, living status, social connectedness and depression); education level with three variables (income, living status and sexual orientation); income with education level; family separation with five variables (marital status, living status, sexual orientation, drug use and social connectedness), mobility with four variables (age, marital status, sexual orientation and social connectedness); living status with five variables (marital status, education, family separation, social connectedness and depression); sexual orientation with 4 variables (education level, family separation, alcohol use and mobility); alcohol use with sexual orientation; drug use with depression and family separation; social connectedness with five variables (marital status, family separation, living status, mobility and depression); and depression with four variables (marital status, living status, social connectedness and drug use).

The final SEM model of factors associated with depression is presented in Fig. 2. Compared with Fig. 1, many correlations failed to reach significance, and based on the results of Pearson correlations (Table 1), the procedures for the model fitting as well as the rule of parsimony, many covariances and paths were deleted. In the final model, many exogenous variables were related to each other before some of them, such as marital status, duration of family separation and living with peers or partners were related to social connectedness. Drug use was independently significantly related to depression level. Analysis of the mediating model shows that social connectedness noted as a buffer or mediating factor between three independent variables (marital status, duration of family separation and

living with peers or partners) and depression. Overall, 74 % of the variance in depression level was accounted for by the variables of the model. This model was generally of adequate fit ( $\chi^2_{\text{GOF}} = 158.5$ ,  $p > .05$ ; GFI = .91; CFI = .89; NFI = .90; RMSEA = .051).

### Discussion

To date, data on depressive symptoms and associated factors among male casual workers have not been available. This study is therefore the first of its kind among this subgroup of men in Vietnam. Despite a moderate level of depression, the prevalence of clinically relevant symptoms was more than 25 % in our sample, which is equivalent to that among Chinese male migrant workers (Wong et al. 2008) and falls within the range of depressive proportions among Indian general communities (Patel and Prince 2001), labor immigrants (Lindert et al. 2009) and the elderly (Djernes 2006) in some countries. Compared to depression in some of other studies, however, it is higher than Vietnamese men living with HIV infection (Esposito et al. 2009), Chinese migrant workers (Qiu et al. 2011), Chinese migrant factory workers (Mou et al. 2011) and Thai community samples (Thongtang et al. 2002). These data echo the mental health challenges faced by male casual laborers. Few of these men mentioned their mental health problems and did not seek psychiatric or psychological consultation even when experiencing serious mental health crises (Huy et al. 2010). Due to this high profile of depression symptoms, it is crucial to understand the factors associated with depression in this population.

According to the results of the SEM analysis, there are a wide range of factors contributing to the risks of depression among male casual laborers, those with direct effect (proximal factors) and those with indirect effects (distal factors). Amongst the distal contributors, it was found that being married was associated with higher age ( $\beta = .41$ ,  $p < .001$ ), and greater income was associated with better education ( $\beta = .23$ ,  $p < .01$ ). Yet surprisingly, education level was negatively related to age ( $\beta = -.19$ ,  $p < .05$ ), that is men aged older are less likely to have higher education level. One explanation to this may be that in our sample, many men of an older age were unable to attend school because of the profound impact of the war as well as poverty at the time of their childhood. Another distal variable is mobility positively related to marital status ( $\beta = .46$ ,  $p < .001$ ), but negatively related to age ( $\beta = -.52$ ,  $p < .05$ ). Men married and at a younger age are more likely to migrate from one place to another—very often from rural to urban setting. That is not surprising because in many Asian cultures, men play the role as breadwinner for their families; therefore, moving to find work is

**Table 1** Selected socio-demographic characteristics

Variable (N = 450)	N (%) Mean $\pm$ SD
Age (year, range = 18–59)	39.23 $\pm$ 10.29
Marital status	
Single	72 (16)
Married	378 (84)
Ethnic origin	
Kinh	444 (98.7)
Minorities	6 (1.3)
Education level (class completed; range = 0–15)	8.19 $\pm$ 2.52
Main occupation during urban stay	
Manual laborers	424 (94.2)
Small trader	19 (4.2)
Others	7 (1.6)
Average income per month (million Vietnam dong, USD\$1 = VND21,000; range = .09–12)	2.60 $\pm$ 1.30
Duration of separation from family (range = 0–60 months)	Median = 30
Mobility index (no of cities per no of migration years for paid works; range = 0–10)	Median = 4.5
Migration status	392 (87 %)
Living status with whom in city	
Alone	46 (10.2)
Peers, friends, or sex partners	404 (89.8)
Social connectedness (range = 4–24)	16.81 $\pm$ 3.79
Sexual orientation	
Homo- and/or bisexual	35 (7.8)
Heterosexual	415 (92.2)
Alcohol use (no of standard drinks per day; the range = 0–18.50)	Median = 2.2
0 drink/day (abstainers)	100 (22.2)
>0–3 drinks/day (moderate drinkers)	180 (40)
>3–5 drinks/day (heavy drinkers)	76 (16.7)
>5 drinks/day (binge/addicted drinkers)	95 (21.1)
Drug use	77 (17.1)

expected of them (Mou et al. 2011; Phinney 2008; The World Bank 2012). Living with peers or partners was closely related to the duration of family separation ( $\beta = .70$ ,  $p < .001$ ), and sexual orientation with alcohol use ( $\beta = .12$ ,  $p < .05$ ) and with mobility ( $\beta = -.18$ ,  $p < .05$ ). These findings suggest that men experiencing longer periods of separation from their families are more likely to live with peers or partners during their urban stay and men who are homo- or bi-sexually oriented are more likely to consume alcohol, but less likely to migrate.

Of those distal factors, none are directly associated with depression, but rather exert an indirect influence through social connectedness. Factors directly associated with social connectedness include only marital status, duration of family separation and living with peers or partners. Married men with shorter durations of family separation and living with peers or partners are more likely to be better socially

connected. Of these three associations, duration of family separation contributed the most to the social connectedness ( $|\beta| = .48$ ,  $p < .001$ ). Contrary to results from previous studies (Gresenz et al. 2001; Muramatsu 2003) indicating that SES (education, income) had a direct association with depressive symptoms, our research shows SES was a distal factor. However, our result is consistent with that in Qiu et al.'s (2011) study among internal migrant workers in China. In terms of periods of separation, other studies reported a “U-shaped” relationship with mental health status as time of migration increases (Qiu et al. 2011), showing that both shorter and longer periods of duration away from home contribute to higher depression. Our study however found that only longer periods of family separation appear to predict a higher likelihood of depression due to reduced levels of social connectedness. Our finding demonstrating the indirect influence of marital status on depression is also

**Table 2** Level of depression

Depression scales (N = 450)	Mean ± SD
I felt depressed (range = 0–3)	.52 ± .72
I felt that everything I did was an effort (range = 0–3)	1.46 ± .83
My sleep was restless (range = 0–3)	.89 ± .96
I was happy <sup>a</sup> (range = 0–3)	.44 ± .71
I felt lonely (range = 0–3)	.57 ± .75
People were unfriendly (range = 0–3)	.60 ± .79
I enjoyed life <sup>a</sup> (range = 0–3)	.42 ± .69
I felt sad (range = 0–3)	.68 ± .76
I felt that people disliked me (range = 0–3)	.61 ± .74
I could not get “going” (range = 0–3)	.44 ± .68
Sum score (range = 0–27)	6.65 ± 5.16

<sup>a</sup> Codes were reversed so that higher sum scores indicate higher level of depression

not in concert with some previous studies. Wong and Song (2008) reveal that Chinese male migrant workers who were married had poorer mental health because they had higher financial expectations placed upon them by their families and thus higher levels of stress. Stress among male migrants might not only derive from very traditional rural cultures, but is accentuated by adverse living and work conditions such as crowded dormitories, long working hours, insecure job contracts, and separation from family (Wong and Song 2008). The same disadvantageous conditions may apply to male casual laborers because our previous qualitative study revealed that insecure livelihood, pressure to earn enough income for the family, living insecurity and bad living conditions in urban settings appeared to provoke stress among these men (Huy et al. 2010). Cohabitation with a peer, a friend or a partner among male casual laborers was not uncommon as a means of coping with loneliness, tedium or monotony associated

with living faraway from their families. Admittedly, being married could be harmful to male casual laborers’ mental health simply because the status of being married brings with it expectations of heavier responsibilities for the family, particularly for children, as a major source of financial support. Taking these factors into account, however, marriage itself did not appear to play an important role because male casual laborers may be accompanied by family members or stay together with peers, friends or even new partners during their time in the city.

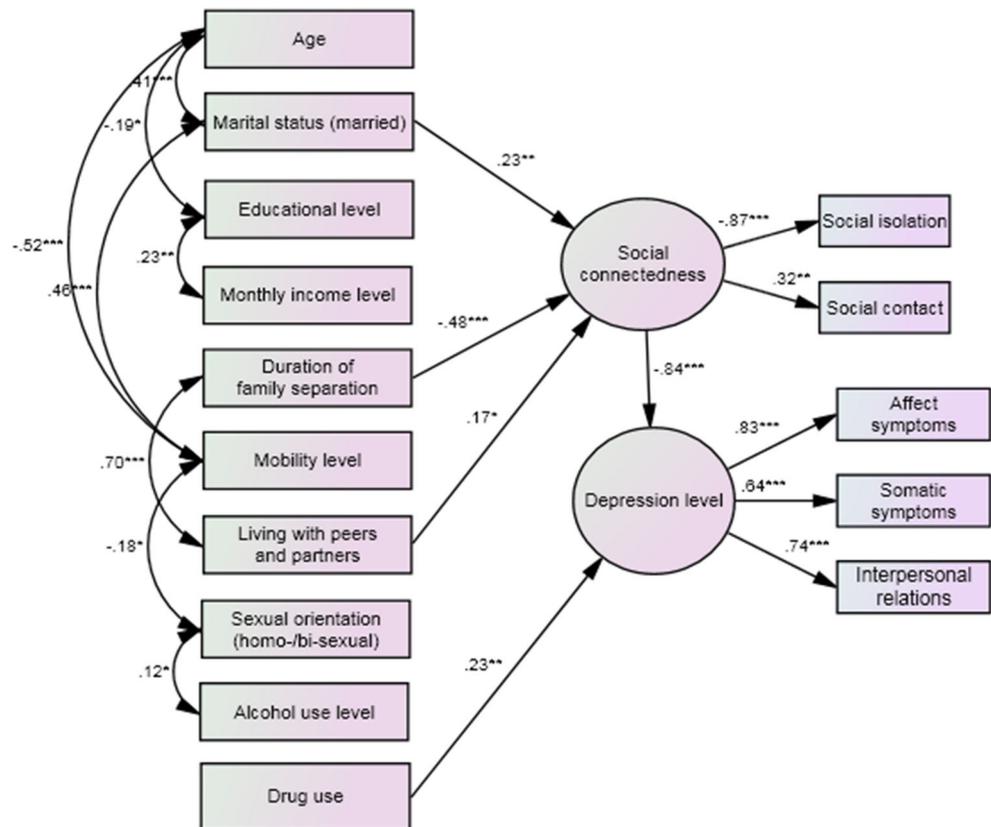
Among the proximal factors, it was surprising that drug use was not associated with distal variables or with social connectedness, but rather, was positively associated with depression. This is consistent with the finding by Jose et al. (Espada et al. 2011) indicating that drug uptake was just one direct association. Of the two proximal factors, social connectedness appears to be far more important because of the many factors involved. Our analysis of the mediation

**Table 3** Correlates among the model variables (N = 450)

Constructs	1	2	3	4	5	6	7	8	9	10	11	12
Age	–											
Marital status (married)	.41***	–										
Education level	–.24***	–.13***	–									
Monthly income level	–.02	.04	.23**	–								
Family separation level	.05	–.20***	.03	.01	–							
Mobility level	–.26***	–.19***	.06	–.08	–.03	–						
Living status (with peers and partners)	–.04	.11*	–.09*	.01	–.27***	.06	–					
Sexual orientation (homo-/bi-sexual)	.04	–.08	.13**	.01	.13**	.11*	–.01	–				
Alcohol use level	.09*	.02	.03	.07	.03	–.04	.05	–.10*	–			
Illicit drug use	–.04	–.03	.03	–.002	.16***	–.03	–.02	.02	–.03	–		
Social connectedness	–.034	.15***	.03	–.01	–.12**	–.11*	.14**	–.08	.03	–.04	–	
Depression level	–.03	–.15***	–.01	.07	.08	.07	–.10*	.01	–.08	.12*	–.65***	–

Cell values are the Pearson product moment correlation coefficient (r); \*  $p \leq .05$ ; \*\*  $p \leq .01$ ; \*\*\*  $p < .001$

**Fig. 2** Final structural equation model of factors associated with depression. Coefficients are standardized path coefficients. Overall model fit:  $\chi^2$  goodness of fit (92, N = 450) = 158.5,  $p > .05$ ; GFI = .91; CFI = .89; NFI = .90; RMSEA = .051. Paths: \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$



model demonstrated that social connectedness plays a mediating factor linking distal variables, especially marital status, duration of family separation and living with peers or partners, to depression. This model fits the data well ( $R^2 = .74$ ; all goodness-of-fit indicators were adequate). This suggests that male casual laborers who are married, have a shorter stay away from their families and live with peers or partners in the city are more likely to have better social connectedness who in turn are less likely to develop clinically relevant depressive symptoms.

The observed relationship between social support and stress and/or depression was also reported by several studies (Chou 2009; Gay et al. 2010; Rivera 2007; Shin et al. 2006). Chou (2009) and Rivera (2007) found that social support had a direct association with depression, while Gay et al. and Shin et al. indicated it as a mediating factor between several elements in the model. In our study instead of using social support, we adopted social connectedness and found, with the exception of drug use, that it acted as a buffer between factors. The socially connected male casual laborers are less likely to develop depressive symptoms.

This study has several strengths. We applied social mapping techniques that allowed us to reach a large, fairly representative sample. It was a community based survey, using a validated instrument. Interviews were conducted by

well trained, gender-matched interviewers. The analysis benefited from applying SEM to investigate factors associated with depressive symptoms and to model the relationships among these factors. The error terms from path analyses were relatively small, suggesting that the model accounted for most variance in depression. We recognize several limitations as well. Because this is a cross-sectional study, the findings from path analyses do not delineate cause-effect relationships, but only suggest the implicit causal relationships among the variables. While it is suited for this type of study, the CES-D cannot be used to make clinical diagnoses because it was not validated in a group of Vietnamese as well as in a group of clinically depressed patients in order to discern the range of scores in the population. Because of its financial limitation, this study has focused on male casual laborers only. Nevertheless, this limitation is understandable given the limited amount of fund supporting this study. Therefore, further research, ideally with longitudinal design combined with clinical diagnoses is needed to validate the depression scale as well as to confirm cause-effect associations among the model factors. Future research should also include qualitative approaches to further explore some deeper factors influencing or related to symptoms of depression. It is also useful to study depression among female casual laborers to see how differences in prevalence of depression and

associated factors would be as compared with male counterparts.

This study contributes to the literature in several ways. Our results point to a high prevalence of depressive symptoms among these men, most of whom are rural to urban unskilled migrants. Key distal factors associated with depression include marital status, duration of family separation and living with peers or partners. Two proximal factors include social connectedness and drug use, in which social connectedness acts as a buffer between distal factors and depression. These findings can be used for prevention and management of mental health problems in the male casual laborer population. Strategies and programs should be designed to improve social connectedness by providing additional social support and connections for these men so they are able to cope with their stressful life situations and/or events. One way would be to strengthen informal social networks among these men and connect them to formal networks in both of their hometown and urban resident areas because this can help decrease their social isolation and improve access to formal social support and protection. Another approach is that professionals, both in preventive and curative mental health services, should be aware of depression and associated factors in itinerant laborers in order to provide or refer to services that are able to detect and treat their mental distress. This study has informed a conceptual framework of the distal and proximal factors associated with depression among male casual laborers that can be used for future research and intervention. As Vietnam has much in common with other developing countries in Southeast Asia, this research provides evidence for policy and practice that may be useful for public health systems in similar countries.

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