



The Journal of Positive Psychology

Dedicated to furthering research and promoting good practice

ISSN: 1743-9760 (Print) 1743-9779 (Online) Journal homepage: <http://www.tandfonline.com/loi/rpos20>

Self-determination in relation to quality of life in homeless young adults: Direct and indirect effects through psychological distress and social support

Manon A.M. Krabbenborg, Sandra N. Boersma, William M. van der Veld, Wilma A.M. Vollebergh & Judith R.L.M. Wolf

To cite this article: Manon A.M. Krabbenborg, Sandra N. Boersma, William M. van der Veld, Wilma A.M. Vollebergh & Judith R.L.M. Wolf (2017) Self-determination in relation to quality of life in homeless young adults: Direct and indirect effects through psychological distress and social support, The Journal of Positive Psychology, 12:2, 130-140, DOI: [10.1080/17439760.2016.1163404](https://doi.org/10.1080/17439760.2016.1163404)

To link to this article: <http://dx.doi.org/10.1080/17439760.2016.1163404>



© 2016 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group



Published online: 28 Apr 2016.



[Submit your article to this journal](#)



Article views: 243



[View related articles](#)



[View Crossmark data](#)

Self-determination in relation to quality of life in homeless young adults: Direct and indirect effects through psychological distress and social support

Manon A.M. Krabbenborg^a, Sandra N. Boersma^a, William M. van der Veld^b, Wilma A.M. Vollebergh^c and Judith R.L.M. Wolf^a

^aDepartment of Primary and Community Care, Impuls – Netherlands Center for Social Care Research, Radboud University Medical Center, Nijmegen, The Netherlands; ^bBehavioural Science Institute, Radboud University, The Netherlands; ^c Department of Interdisciplinary Social Sciences, University of Utrecht, Utrecht, The Netherlands

ABSTRACT

The self-determination theory emphasizes the importance of satisfaction with autonomy, competence, and relatedness for a person's psychological growth and well-being. This study examines associations between autonomy, competence, and relatedness with quality of life in homeless young adults; and whether possible associations are mediated by psychological distress and perceived social support. By means of face-to-face interviews, 255 homeless young adults who receive care from 10 Dutch shelter facilities for homeless young adults have been interviewed (*M* age = 20, 77% male, 51% Dutch Nationality) shortly after entering the facility. Autonomy, competence, and relatedness are all associated with quality of life, with competence as the highest correlate. Psychological distress mediates both competence and autonomy, and social support mediates competence as well as relatedness. These findings emphasize the importance of intervention programs for homeless young adults, focusing on the enhancement of self-determination, especially competence, to improve their quality of life.

ARTICLE HISTORY

Received 9 April 2015
Accepted 13 February 2016

KEYWORDS

Homeless young adults;
self-determination theory;
quality of life; psychological
distress; perceived social
support

Introduction

The quality of life of homeless young adults is low compared to young adults from the general population (Bearsley & Cummins, 1999; Hubley, Russell, Palepu, & Hwang, 2014) as they suffer from a wide range of problems, such as poor psychological (Noom & de Winter, 2001; Unger, Kipke, Simon, Montgomery, & Johnson, 1997; Whitbeck, Hoyt, & Bao, 2000) and physical health, including infectious diseases and substance abuse (Adlaf & Zdanowicz, 1999). In addition, approximately 30% of homeless young adults appear to have an intellectual disability (Korf, Diemel, Riper, & Nabben, 1999; van der Laan et al., 2013). Furthermore, many have very few resources to enable them to participate in society; for example, no stable housing, low levels of education, no or low steady income and a lack of employment, safety, and security (Beijersbergen, Jansen, & Wolf, 2008; Jansen, Wolf, & van der Heijden, 2007). Many homeless young adults have grown up in hostile environments characterized by neglect, abuse, or family conflicts (Slesnick, Dashora, Letcher, Erdem, & Serovich, 2009; Thompson, Bender, Windsor, Cook, & Williams, 2010; Whitbeck et al., 2000) and most of them still experience limited support from their

social network (Johnson, Whitbeck, & Hoyt, 2005; Unger et al., 1997; Wolf, Altena, Christians, & Beijersbergen, 2010). Sometimes, counterproductive and abusive relationships are maintained due to the difficulty they experience in developing healthy relationships (Barker, 2014; Thompson, McManus, Lantry, Windsor, & Flynn, 2006). Having to live on the street forces homeless young adults to develop skills in order to survive on their own and this results in having to invest disproportionately in their ability to look after themselves and to take control of their lives, at the expense of normal age-appropriate educational and social activities (Barker, 2014; Thompson et al., 2006). Survival also places a heavy emphasis on being cautious of others, such as professionals (Kidd, 2003; Thompson et al., 2006). Homeless young adults often feel excluded from society, which can result in their believing that they are not competent enough to maintain themselves in that society (Brueckner, Green, & Saggars, 2011). Their troubled history and challenging living situation contribute to their psychological health problems and their limited social support, which both negatively influence their quality of life (Bearsley & Cummins, 1999; Hubley et al., 2014; Johnson et al., 2005; Lam & Rosenheck, 2000). Despite the hardships and

extreme living conditions, homeless young adults show remarkable resilience, as the available research suggests that three quarters of these young adults are able to make a successful transition out of homelessness (Kipke, Unger, O'Connor, Palmer, & LaFrance, 1997). Homeless young adults' personal strengths and resources, and their ability to learn from their difficult experiences, appear to be crucial factors in a successful transition (Bender, Thompson, McManus, Lantry, & Flynn, 2007; Lindsey, Kurtz, Jarvis, Williams, & Nackerud, 2000; Werner & Smith, 1992).

In the Netherlands, there are approximately 9000 homeless young adults, but this number appears to be increasing (Brummelhuis & Drouven, 2011). There is a strong need for high-quality service provision for this specific group, preferably through integrated and evidence-based interventions. In the Netherlands, both homeless young adults and professionals have expressed the need to improve the quality of care for homeless youth. However, research on this topic is scarce and no compelling evidence exists for effective interventions for this group (Altena, Brilleslijper-Kater, & Wolf, 2010). In addition, in January 2015, a major decentralization of tasks and responsibilities was introduced regarding welfare, youth care, and participation. This was moved from central government to local municipalities in the Netherlands (Schalk, Reijnders, Vielvoye, Kouijzer, & de Jong, 2014). Nowadays, municipalities are in charge of helping citizens to find work and stay employed. In addition, they are responsible for developing and maintaining a seamless system of integrated youth care and supporting the self-reliance of vulnerable citizens, such as homeless young adults. The general aim of this major decentralization process is to make more use of personal strengths, support, and resources in the community. As regards homeless young adults, local social policies currently focus on the prevention of youth homelessness. For those young adults who have become homeless, the focus is on outreach and practical support in the community and (re)activating and maintaining their social networks. This includes the involvement of important members of the community in the areas of education, work, and housing.

Efforts to improve homeless young adults' quality of life are important given the often extreme social deprivation of homeless young adults and their difficulty in both holding their own in society and in establishing lasting, trustful relationships (Thompson et al., 2006). Quality of life is an important indicator of how homeless young adults experience their living situation (Hubley et al., 2014; Lehman, 1988). It puts emphasis on one's subjective perception of life instead of objective experiences. In addition, in social policies as well as in research and monitoring schemes, quality of life is most often considered

as an important outcome of effective interventions for homeless youth (Al Shamma et al., 2015). Moreover, quality of life is associated with different positive outcomes such as psychological well-being and independent housing (Hubley et al., 2014; Wolf, Burnam, Koegel, Sullivan, & Morton, 2001). Higher levels of relatedness are also predictive for higher levels of quality of life (Al Shamma et al., 2015). Thus, quality of life is a useful and important measure when conducting (intervention) studies among homeless young adults.

The self-determination theory (Ryan & Deci, 2000b) provides a theoretical framework for the enhancement of psychological well-being. As psychological well-being is associated with quality of life (Proctor, Linley, & Maltby, 2009; Ryff & Keyes, 1995) and quality of life, in turn, is an important indicator of homeless young adults' experience of life (Hubley et al., 2014; Lehman, 1988), the self-determination theory seems a relevant framework for the study of quality of life in homeless young adults. According to this theory, three basic psychological needs contribute independently to, and should be satisfied for, an ongoing experience of psychological well-being: the experience of autonomy, competence, and relatedness (Deci & Ryan, 2000, 2008). According to Ryan and Deci (2000b), these predictors of self-determination are important for individuals of all age groups. Feeling autonomous refers to acting of your own volition, having a sense of choice and endorsement in the activities one performs. Feeling competent refers to the perception that one's actions result in the intended outcomes and effects. Relatedness refers to having a sense of belonging and feeling connected to others. These three needs are proposed as the essential requirements for a person's psychological growth (Ryan & Deci, 2000b). Experiencing autonomy, competence, and relatedness depends among other things on the social environment people live in (Deci & Ryan, 2000). People experience a significant psychological disadvantage when they have to stay in situations that consistently block their self-determination, as is the case among those who have experienced parental rejection and punitive parenting environments, such as many homeless young adults have. On the other hand, people experience psychological well-being when they reside in supportive and safe social environments that satisfy their basic needs.

This study aims to examine how homeless young adults' basic psychological needs are associated with their quality of life. Although several studies mentioned the importance of self-determined behavior in the recovery process of homeless young adults (Bender et al., 2007; De Winter & Noom, 2003; Thompson, Pollio, Eyrych, Bradbury, & North, 2004), no study up till now has investigated associations between the three basic psychological needs and/or quality of life in this population. In addition, we will explore

the extent to which possible associations between autonomy, competence, and relatedness on the one hand and quality of life on the other hand are mediated by psychological distress and perceived social support. In young adults in general, psychological distress is influenced by lack of self-determination (Julien, Guay, Sénécal, & Poitras, 2009) and addressing this issue is consistently shown to be a strong precursor to improvement of quality of life in homeless young adults (Proctor et al., 2009; Ryff & Keyes, 1995). Psychological distress is considered a serious problem because it is associated with several adverse factors, such as substance abuse, conduct problems, and sexual risk behavior in homeless young adults (Elkington, Bauermeister, & Zimmerman, 2010; Whitbeck et al., 2000). In addition, the day-to-day stress that these young adults experience, such as witnessing violence or coercive interactions, may create additional psychological symptoms or add related co-morbid symptoms to existing disorders (Hodgson, Shelton, van den Bree, & Los, 2013; Whitbeck et al., 2000). Social support is a key source of protection for homeless young adults (Bender et al., 2007; Johnson et al., 2005; Thompson et al., 2004) as it may reduce the negative effects of a stressful life (Unger et al., 1998) and can prevent enduring homelessness (Tavecchio, Thomeer, & Meeus, 1999). Furthermore, social support appears to be very important for homeless young adults' process of recovery and social participation. This support may compensate for their still insufficient capacity for self-regulation and can be used as a source to enable them to become more self-reliant (Wolf, 2012). Also, social support, since the decentralization of responsibility in the Netherlands, is even more important as homeless young adults need to build and use their social network.

The results of this study may be beneficial for the development or adaptation of existing interventions for homeless young adults. If positive associations between, for instance, experiencing autonomy, competence, and relatedness and quality of life were found, intervention programs could focus on strengthening these basic needs.

The research questions of this study are twofold. (1) Can experiencing autonomy, competence, and relatedness be associated with improved quality of life in young homeless adults shortly after entering a shelter facility? (2) Are these possible associations mediated by psychological distress and perceived social support? We expect on the basis of the self-determination theory and previous research that the experience of each basic psychological need is independently related to a higher quality of life. Further, the experience of autonomy, competence, and relatedness are expected to be associated with lower levels of psychological distress and more perceived social support. Lower levels of psychological distress and more perceived social support are therefore expected to be associated with a

higher quality of life, and to mediate the relationship of autonomy, competence, and relatedness with quality of life.

Method

Design

For our study, we used the baseline data from a cluster randomized controlled trial on the effectiveness of a strengths-based method for homeless young adults, called 'Houvast' (Dutch for 'grip') (Krabbenborg, Boersma, & Wolf, 2013). This study was conducted among 10 Dutch shelter facilities which provide ambulant or residential care to homeless young adults, aged 18 and older. Informed consent was obtained from all individual participants included in the study. This study complies with the criteria for studies that have to be approved by an accredited Medical Review Ethics Committee, region Arnhem-Nijmegen. Upon consultation, the Ethics Committee stated that due to the behavioral character of the intervention, the study was exempt from formal review (registration number 2011/260).

Participants and procedure

Shelter facilities for homeless young adults were included in the study if they met the following inclusion criteria: they were aimed at (a) delivering ambulant and/or residential care to homeless young adults (not specifically at teenage mothers or in general to homeless adults), (b) provision of care to at least 15–20 homeless young adults per year, (c) provision of care for an average period of at least three months consecutively. In total, we contacted 35 shelter facilities for homeless young adults and invited them to visit an introductory meeting on the study. Of those 35 shelter facilities, 17 did not show any interest in the study and 8 did initially but eventually chose not to participate due to financial restrictions, implementation of other methods, involvement in other studies, or internal reorganization. We observed no differences between participating and non-participating shelter facilities with respect to location or whether they provided ambulant or residential care at the time of recruitment.

Homeless young adults were recruited from the 10 participating shelter facilities in the study that met the following inclusion criteria: (a) not living with their parents while receiving care; and (b) required care for more than two weeks. The contact person and the professionals of each shelter facility were familiar with the inclusion criteria. The professionals working in the shelter facilities registered all homeless young adults at the time of entering the shelter facility and approached them to participate in the study. In total, 393 homeless young adults were approached, of

whom 142 (36, 1%) were not interviewed for the following reasons: (a) they had already left the shelter facility before an interview appointment could be made (14%); (b) they had no interest in the study (10%); (c) they would rather spend time on other activities, such as spending time with friends (5%); and (d) unknown reasons (50%). After participants agreed to take part, the professional or contact person of each shelter facility provided the researcher with contact information for these potential participants. The researcher subsequently scheduled an interview appointment. We aimed to administer the baseline interview within two weeks. The homeless young adults received €10 for participating in the baseline interview. The data were collected between December 2011 and May 2013.

Face-to-face interviews were administered by trained research assistants who had experience or an affinity with working with vulnerable people. All structured interviews lasted approximately 90 min. We used a variation of a multiform design (Little & Rhemtulla, 2013) using two questionnaires (form 1 and 2) in which the content was identical but in which the questions were asked in a different order.

Measurements

Several demographic and background characteristics were collected, such as: age, gender, and ethnicity (Dutch/Surinamese/Moroccan/Turkish/other). Educational level was divided into four categories: lowest (did not complete or only completed primary school); low (pre-vocational secondary education or lower secondary vocational education); intermediate (higher secondary vocational education, senior general secondary education, pre-university); to high (higher professional education or university education). The Hayes Ability Screening Index (Hayes, 2000) was used to get an indication of whether a homeless young adult had a suspected intellectual disability ($IQ < 70$). Furthermore, 20 reasons for leaving home were provided and homeless young adults had to indicate whether or not each of these reasons had contributed to leaving home prematurely (yes/no), for example, physical abuse, alcohol abuse by parent(s), and bad relationship with (step) mother.

Quality of life was measured with the brief Dutch version of the Lehman Quality of Life Interview (Lehman, 1988; Lehman, Kernan, & Postrado, 1995; Wolf, 2007). The response scale ranged from terrible (1) to delighted (7). Quality of life was measured with the participants being asked an identical question twice: 'how do you feel about your life in general?' This question was asked at the beginning and at the end of each interview. Higher scores reflected a higher quality of life. The Cronbach's α in our study was .74.

The basic psychological needs scale (Deci & Ryan, 2000) was used to measure the theoretical concept of self-determination. The scale consists of three subscales: autonomy, competence, and relatedness. An example of the autonomy subscale is: 'I feel like I can decide for myself how to live my life.' An example of the competence subscale is: 'I often do not feel very capable.' An example of the relatedness subscale is: 'I really like the people I interact with.' Each subscale reflects the extent to which people experience fulfillment of that particular psychological need. Homeless young adults were asked to indicate their agreement with the 21 items on a 7-point Likert scale that ranges from 1 (not true at all) to 7 (definitely true). In this study, the Cronbach's α of the three subscales were .62 for autonomy, .58 for competence, and .75 for relatedness.

The Brief Symptom Inventory (BSI-53) was used to assess psychological distress (De Beurs & Zitman, 2005; Derogatis, 1975, 1993). The BSI consists of 53 items, covering 9 symptom dimensions and a general scale of psychological distress. Items are measured on a 5-point Likert scale that ranges from 0 (not at all) to 4 (extremely). The Cronbach's α of the general scale used in this study was .96.

Perceived social support was also measured with the brief Dutch version of the Lehman Quality of Life Interview (Lehman, 1988; Lehman et al., 1995; Wolf, 2007). The scale consists of three items. An example of an item is: 'How do you feel about the people you see socially?' Cronbach's α in our study was .70.

Participants

The study sample consisted of 255 homeless young adults (67.8% male). Their age ranged from 17 to 26 years (M age = 20.1, SD = 1.8) and about half of them had Dutch nationality (51.0%). Their educational level ranged from lowest (32.1%), through low (42.9%) and intermediate (24.6%) to high (.4%). In total, 29.0% of the homeless young adults had a suspected intellectual disability. Most common reasons for leaving home were family conflicts (65.9%), bad relationship with (step)mother (45.9%) or (step)father (40.0%), financial problems (38.8%), and emotional abuse (35.7%). At the time of the interview, 25.5% (n = 65) of the homeless young adults received ambulant care and 74.5% (n = 190) received residential care.

Data analyses

Before conducting analyses, we screened our data on missing values, outliers, multicollinearity, and distribution of the data. We had only one missing value, on perceived social support. There was no multicollinearity as the highest variance inflation factor (VIF) was 1.83 and the

lowest tolerance statistic was 1.32 which was far below the suggested cut-off of 10 (Menard, 2002; Myers, 1990). The assumptions of normality were violated by psychological distress (Skewness = 1.32, $SE = .15$, Kurtosis = 1.52, $SE = .30$) and perceived social support (Skewness = -1.36 , $SE = .15$, Kurtosis = 2.30, $SE = .30$), however, based on the large enough sample size we decided not to transform these variables (Tabachnick & Fidell, 2001).

We tested whether psychological distress and perceived social support mediated the relationships between autonomy, competence, and relatedness on the one hand and quality of life on the other hand, using Hayes procedure (Preacher & Hayes, 2004) to test for indirect effects in SPSS 21. The dependent variable was quality of life, and the independent variables were autonomy, competence, and relatedness (controlling for the influence of each on one another). Psychological distress and perceived social support were included as mediators. We investigated the direct, indirect, and total effects and we only interpreted indirect effects after the total effect was significant or when the total effect was not significant but the direct and indirect effects were significant and had opposite signs.

Results

Means, standard deviations, and Pearson correlations of the measurements are presented in Table 1. On average, homeless young adults rated their general quality of life as 'equally dissatisfied, satisfied' or 'mostly satisfied' ($M = 4.55$ and $SD = 1.24$). Regarding their perception of self-determination, homeless young adults were roughly equally satisfied with autonomy ($M = 4.94$, $SD = .88$) and competence ($M = 4.82$ and $SD = .90$) and most were satisfied with relatedness ($M = 5.31$ and $SD = .84$). Their level of psychological distress was high ($M = .82$, $SD = .63$). According to Dutch norm scores for young adults between 18 and 29 years: 39.9% of the men and 58.5% of the women scored above the norm (high for men = .69–1.17, high for women = .69–1.55). Homeless young adults were 'mostly satisfied' or 'pleased' with their perceived social support ($M = 5.63$ and $SD = .98$).

We examined Pearson correlations to test whether autonomy, competence, relatedness, and quality of life

were related. The correlations showed that homeless young adults' autonomy, competence, and relatedness were positively associated with quality of life (autonomy, $r = .36$, $p < .001$; competence, $r = .39$, $p < .001$; relatedness, $r = .34$, $p < .001$). In addition, psychological distress was negatively associated with quality of life ($r = -.53$, $p < .001$), and perceived social support was positively associated with quality of life ($r = .42$, $p < .001$). The satisfaction with autonomy, competence, and relatedness was negatively associated with psychological distress (autonomy, $r = -.49$, $p < .001$; competence, $r = -.48$, $p < .001$; relatedness, $r = -.38$, $p < .001$) and positively associated with perceived social support (autonomy, $r = .39$, $p < .001$; competence, $r = .42$, $p < .001$; relatedness, $r = .59$, $p < .001$).

The second aim of the study was to test whether psychological distress and perceived social support mediated the relationship between self-determination (autonomy, competence, relatedness) and quality of life. Table 2 presents the results of the mediation analysis and Figure 1 displays the model that was estimated. Results indicate that competence had an indirect effect on quality of life through both psychological distress (estimate = .12, $SE = .04$, $CI = .06-.21$) and perceived social support (estimate = .04, $SE = .02$, $CI = .01-.11$). So, higher levels of competence were related to less psychological distress and to more perceived social support. Lower levels of psychological distress and more satisfaction with perceived social support resulted in a higher quality of life. Furthermore, autonomy had an indirect effect on quality of life through psychological distress (estimate = .14, $SE = .04$, $CI = .07-.24$). Thus, the more autonomous homeless young adults were, the less psychological distress they experienced and, in turn, the higher the quality of life. Finally, a significant indirect effect on quality of life was found for relatedness, through perceived social support (estimate = .14, $SE = .06$, $CI = .03-.28$). Relatedness was positively associated with perceived social support, which in turn was associated with a higher quality of life.

The total variance in quality of life explained by the collective set of independent variables was 38.0%. The total explained variance of psychological distress and perceived social support by autonomy, competence, and relatedness was 30.7 and 37.7%, respectively.

Table 1. Means, standard deviations, and bivariate correlations among the study variables.

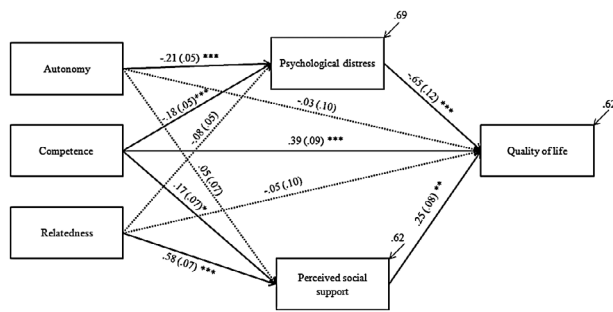
	1	2	3	4	5	6	<i>M</i>	<i>SD</i>
1. Autonomy	–						4.94	0.88
2. Competence	0.58***	–					4.82	0.90
3. Relatedness	0.50***	0.47***	–				5.31	0.84
4. Psychological distress	–0.49***	–0.48***	–0.38***	–			0.82	0.63
5. Perceived social support	0.39***	0.42***	0.59***	–0.40***	–		5.63	0.98
6. Quality of life	0.36***	0.49***	0.34***	–0.53***	0.42***	–	4.55	1.24

*** $p < 0.001$.

Table 2. Direct, indirect, and total effects for autonomy, competence, and relatedness with quality of life.

Variable	Estimate	SE	95% CI
<i>Direct effect</i>			
Autonomy	−0.03	0.10	−0.22 to 0.16
Competence	0.39	0.09	0.21 to 0.57
Relatedness	−0.05	0.10	−0.24 to 0.15
<i>Indirect effect via psychological distress</i>			
Autonomy	0.14	0.04	0.07 to 0.24
Competence	0.12	0.04	0.06 to 0.21
Relatedness	0.06	0.03	−0.00 to 0.13
<i>Indirect effect via perceived social support</i>			
Autonomy	0.01	0.02	−0.02 to 0.06
Competence	0.04	0.02	0.01 to 0.11
Relatedness	0.14	0.06	0.03 to 0.28
<i>Total effect</i>			
Autonomy	0.12	0.10	−0.08 to 0.32
Competence	0.55	0.10	0.36 to 0.74
Relatedness	0.15	0.10	−0.04 to 0.34

Notes: Bold indicates significant effect. CI = confidence interval.

**Figure 1.** Path coefficients showing direct relations between autonomy, competence, and relatedness and perceived social support, psychological distress, and quality of life.

Notes: Dotted lines indicated non-significant paths. All paths are standardized coefficients, and bootstrap standard errors of the parameters estimates are shown in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Discussion

This is the first study of homeless young adults to examine the association between autonomy, competence, and relatedness on the one hand and quality of life on the other hand. We found positive univariate associations between autonomy, competence, relatedness, and quality of life. Thus, homeless young adults who experience more autonomy, competence, and relatedness were shown to have a higher quality of life shortly after entering the shelter facility. Mediation analyses also showed that autonomy is indirectly associated with quality of life through psychological distress. Furthermore, the relationship between competence and quality of life was shown to be mediated by both psychological distress and perceived social support, and relatedness was indirectly associated with quality of life through perceived social support.

Although the present results cannot be compared with previous studies among homeless young adults as no

previous results on the experience of self-determination are available, the results of this study are, to a large extent, consistent with studies among children, adolescents, and young people from the general population (Leversen, Danielsen, Birkeland, & Samdal, 2012; Reis, Sheldon, Gable, Roscoe, & Ryan, 2000; Uysal, Lin, & Knee, 2009; Véronneau, Koestner, & Abela, 2005). Our results have shown that as quality of life is most strongly influenced by competence, this tends to be the most important psychological need for the quality of life in homeless young adults. Some studies among adolescents also found the highest correlation between competence and life satisfaction (Leversen et al., 2012), and found competence to be predictive for concurrent and future levels of well-being (Véronneau et al., 2005). This is probably why many prevention and intervention programs for youth have focused on strengthening competence skills (Catalano, Berglund, Ryan, Lonczak, & Hawkins, 2004). Further, in a previous study among students, it was found that the experience of relatedness was only associated with positive levels of well-being, such as feeling pleased or happy, whereas negative levels of well-being, such as feeling depressed or angry, were not associated with relatedness (Reis et al., 2000). In the present study, we only measured psychological distress, a negative measure of psychological well-being. Possibly, an association between relatedness and well-being will be found when including positive measures of psychological well-being.

The self-determination theory postulates that the fulfillment of self-determination contributes to psychological well-being and applies to individuals of all age groups. Although the present study has shown that the experience of relatedness does not independently contribute to psychological distress, it still implies that becoming self-determined through the experience of autonomy and

competence could buffer against psychological distress. In addition, it supports the theory that experiencing autonomy is not related to perceived social support, but experiencing relatedness and competence is. Thus, becoming more competent and experiencing relatedness to others could also strengthen homeless young adults' satisfaction with their social support. The results of the present study are, for the most part, in line with self-determination theory and reveal that the assumed relationships are also valid in this very deprived group of homeless young adults. For homeless young adults, in particular, building their sense of competence is important as it can protect them from further negative outcomes, such as substance abuse or low self-esteem (Fergus & Zimmerman, 2005). In addition, experiencing autonomy is essential, as free choice is a crucial motivational driver for change (Bender et al., 2007). During adolescence, friends become more important (Leversen et al., 2012) for homeless young adults, in particular, as they often feel little emotional support from their relatives. Therefore, their experience of relatedness with friends is of significant importance as they can help to improve homeless young adults' lives and eventually facilitate a transition into more stable living situations (la Haye et al., 2012; Johnson et al., 2005).

Because all three constructs of self-determination among homeless young adults are positively associated with quality of life, interventions should support homeless young adults in enhancing their self-determination. How can we enhance homeless young adults' experience of autonomy, competence, and relatedness? According to the self-determination theory, positive feedback should be provided and intrinsic motivation should be enhanced (Deci & Ryan, 2000). Intrinsic motivation refers to doing something because it is inherently interesting or enjoyable instead of doing it under pressures or for rewards (Ryan & Deci, 2000a). This is especially important for homeless young adults as they often feel that professionals disregard their autonomy and independence (De Winter & Noom, 2003; Thompson et al., 2006). Instead, professionals should create an open learning environment in which they seek a dialog with homeless young adults, in which they support them in choosing and attaining their own goals, and in which they give them positive feedback. Motivational interviewing, which is grounded in the self-determination theory, appears to be an appropriate technique to help create the conditions for good quality care and positive outcomes (Markland, Ryan, Tobin, & Rollnick, 2005; Miller, 1983). The aim of motivational interviewing is to enhance intrinsic motivation for changing problematic behavior by exploring and resolving ambivalence (Miller & Rollnick, 2002, p. 25). The role of the professionals is to help the client to locate and clarify their motivation for change and to provide information and alternative perspectives

on problem-solving and potential ways of changing (Miller, 1983). Turning problematic behavior into more adaptive problem-solving through motivational interviewing is also related to improved quality of life (Brodie, Inoue, & Shaw, 2008; Channon et al., 2007). The principles of motivational interviewing fit well with the principles of working according to a strengths-based approach, which has gained considerable popularity in recent years. Both methods underline the importance of commitment, honesty, and autonomy in the relationship between clients and professionals (Planije, van 't Land, & Wolf, 2003; Wolf, 2012). To conclude, motivational interviewing is a technique that can be used by professionals to foster homeless young adults' self-determined behavior and, in turn, improve their quality of life. To date, there are only a few studies reporting on the effectiveness of interventions for homeless young adults (Altena et al., 2010). However, none of these interventions are aimed at meeting their basic psychological needs. The need for evidence-based interventions among homeless young adults is high and therefore Houvast was developed, in close collaboration with professionals and homeless young adults in the Netherlands (Wolf, 2012). The Houvast intervention, which is also grounded in self-determination theory, is a recovery-oriented intervention that aims to improve the quality of life of homeless young adults by focusing on their strengths and supporting their capacity for self-reliance. The effectiveness of this intervention is being examined elsewhere (Krabbenborg et al., 2013, 2015).

This study is unique because it is the first to examine the relation between self-determination and homeless young adults' quality of life. However, the study also has some limitations. It was not possible in this study to estimate reciprocal effects. If that had been possible, we could have tested the hypothesis or could have investigated whether homeless young adults who receive less social support, would also report low relatedness (Deci & Ryan, 2000). Also, we could have tested a possible significant path between perceived social support and the effect of psychological distress on quality of life as confirmed by others (Lee, Tyler, & Wright, 2010; Lippert & Lee, 2015). Examining reciprocal effects would also have provided the opportunity to investigate whether the 'accumulation of risk perspective,' that has been investigated among homeless adults (Lippert & Lee, 2015), can be applied to homeless young adults as well. This approach highlights that earlier advantages (and disadvantages) influence the accumulation of resources (or hardships) throughout one's life and are related to the mental health of homeless people (Ben-Shlomo & Kuh, 2002). However, for this type of analyses, we would have needed instrumental variables or longitudinal data that would enable us to specify a cross-lagged panel model where the cross-lagged effects

can be interpreted as reciprocal causal effect. This was not possible with the present cross-sectional data. First of all, future research should incorporate a longitudinal approach. Secondly, the Cronbach's alphas for autonomy and competence were low. For future research, it might be interesting to validate these scales, including factor analyses, among a population of homeless young adults, which would probably lead to higher internal consistency of adapted scales. Thirdly, in this study, we did not make a comparison between young homeless adults and young adults who are housed and never were homeless or with young adults who were re-housed after being homeless. Homeless young adults have to deal with extreme situations in which basic needs (food, water, and shelter) are often lacking. According to Maslow (1970), these needs must be satisfied before a person can obtain life satisfaction. A study among homeless adults who found housing showed that quality of life increased, especially among those who made a transition to independent living situations (Wolf et al., 2001). This emphasizes the need for future research to include both homeless and housed young adults in order to get a more complete picture of the psychological needs of young adults in different living situations. In addition, further research is needed to gather more in-depth understanding of homeless young adults' experience of autonomy, competence, and relatedness in relation to other meaningful people around them. For example, to investigate whether homeless young adults' need for autonomy, competence, and relatedness are satisfied by people they emotionally rely on, such as friends or peer support workers. Possibly, this influences homeless young adults' experience of self-determination and well-being, as already proven in the previous studies among other groups, such as people in romantic relationships (Patrick, Knee, Canevello, & Lonsbary, 2007) and college students (Ryan, La Guardia, Solky-Butzel, Chirkov, & Kim, 2005).

Conclusion

This study is the first to report on self-determination in relation to the quality of life of homeless young adults. Quality of life is most strongly influenced by the experience of competence; although autonomy and relatedness also appear to be significant correlates of homeless young adults' quality of life. Psychological distress and perceived social support mediate the relationship between autonomy, competence, and relatedness on the one hand and quality of life on the other hand. As previous studies have demonstrated, homeless young adults suffer from low quality of life, high rates of psychological distress, and limited social support, interventions designed to improve homeless young adults' quality of life may benefit from

the research findings. Professionals should enhance homeless young adults' self-determination, especially their perceived competence.

Acknowledgments

We gratefully acknowledge the participation of all homeless young adults and the social workers in the study.

Disclosure statement

The authors declare that they have no conflicts of interest.

Funding

This work was supported by the Netherlands Organization for Health Research and Development (ZonMw) under [grant number 80-82435-98-10121].

References

- Adlaf, E. M., & Zdanowicz, Y. M. (1999). A cluster-analytic study of substance problems and mental health among street youths. *The American Journal of Drug and Alcohol Abuse*, 25, 639–660. doi:<http://dx.doi.org/10.1081/ADA-100101884>
- Al Shamma, S., Van Straaten, B., Boersma, S., Rodenburg, G., Van der Laan, J., Van de Mheen, D., & Wolf, J. (2015). *Dakloze mensen in de vier grote steden: Veranderingen in 2,5 jaar* [Homeless people in the four major cities in the Netherlands: Changes in 2,5 years]. Nijmegen & Rotterdam: IVO & Radboudumc.
- Altena, A. M., Brilleslijper-Kater, S. N., & Wolf, J. R. (2010). Effective interventions for homeless youth. *American Journal of Preventive Medicine*, 38, 637–645. doi:<http://dx.doi.org/10.1016/j.amepre.2010.02.017>
- Barker, J. (2014). Alone together: The strategies of autonomy and relatedness in the lives of homeless youth. *Journal of Youth Studies*, 17, 763–777. doi:<http://dx.doi.org/10.1080/13676261.2013.853874>
- Bearsley, C., & Cummins, R. A. (1999). No place called home: Life quality and purpose of homeless youths. *Journal of Social Distress and the Homeless*, 8, 207–226. doi:<http://dx.doi.org/10.1023/A:1021340020431>
- Beijersbergen, M., Jansen, C., & Wolf, J. (2008). *Zwerfjongeren in Utrecht Omvang en profiel van de zwerfjongerenpopulatie* [Homeless youth in Utrecht: Number and profile]. Nijmegen: UMC St Radboud.
- Bender, K., Thompson, S. J., McManus, H., Lantry, J., & Flynn, P. M. (2007). Capacity for survival: Exploring strengths of homeless street youth. *Child and Youth Care Forum*, 36, 25–42. doi:<http://dx.doi.org/10.1007/s10566-006-9029-4>
- Ben-Shlomo, Y., & Kuh, D. (2002). A life course approach to chronic disease epidemiology: Conceptual models, empirical challenges and interdisciplinary perspectives. *International Journal of Epidemiology*, 31, 285–293. doi:<http://dx.doi.org/10.1093/ije/31.2.285>
- Brodie, D. A., Inoue, A., & Shaw, D. G. (2008). Motivational interviewing to change quality of life for people with chronic heart failure: A randomised controlled trial. *International Journal of Nursing Studies*, 45, 489–500. doi:<http://dx.doi.org/10.1016/j.ijnurstu.2006.11.009>

- Brueckner, M., Green, M., & Sagers, S. (2011). The trappings of home: Young homeless people's transitions towards independent living. *Housing Studies*, 26, 1–16. doi:<http://dx.doi.org/10.1080/02673037.2010.512751>
- Brummelhuis, K., & Drouven, L. (2011). *Telling zwerfjongeren. Aantallen op basis definitie 2010* [Counting of homeless youth: Number based on the 2010 definition]. Enschede: Bureau HHM.
- Catalano, R. F., Berglund, M. L., Ryan, J. A., Lonczak, H. S., & Hawkins, J. D. (2004). Positive youth development in the United States: Research findings on evaluations of positive youth development programs. *The Annals of the American Academy of Political and Social Science*, 591, 98–124. doi:<http://dx.doi.org/10.1177/0002716203260102>
- Channon, S. J., Huws-Thomas, M. V., Rollnick, S., Hood, K., Cannings-John, R. L., Rogers, C., & Gregory, J. W. (2007). A multicenter randomized controlled trial of motivational interviewing in teenagers with diabetes. *Diabetes Care*, 30, 1390–1395. doi:<http://dx.doi.org/10.2337/dc06-2260>
- De Beurs, E., & Zitman, F. (2005). De brief symptom inventory (BSI). De betrouwbaarheid en validiteit van een handzaam alternatief voor de SCL-90. *Maandblad Geestelijke Volksgezondheid*, 61, 120–141.
- De Winter, M., & Noom, M. (2003). Someone who treats you as an ordinary human being... Homeless youth examine the quality of professional care. *British Journal of Social Work*, 33, 325–338. doi:<http://dx.doi.org/10.1093/bjsw/33.3.325>
- Deci, E. L., & Ryan, R. M. (2000). The “what” and “why” of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, 11, 227–268. doi:http://dx.doi.org/10.1207/S15327965PLI1104_01
- Deci, E. L., & Ryan, R. M. (2008). Facilitating optimal motivation and psychological well-being across life's domains. *Canadian Psychology/Psychologie canadienne*, 49, 14–23. doi:<http://dx.doi.org/10.1037/0708-5591.49.1.14>
- Derogatis, L. R. (1975). *The brief symptom inventory*. Baltimore, MD: Clinical Psychometric Research.
- Derogatis, L. R. (1993). *Brief symptom inventory (BSI). Administration, scoring, and procedures manual* (3rd ed.). Minneapolis, MN: National Computer Systems.
- Elkington, K. S., Bauermeister, J. A., & Zimmerman, M. A. (2010). Psychological distress, substance use, and HIV/STI risk behaviors among youth. *Journal of Youth and Adolescence*, 39, 514–527. doi:<http://dx.doi.org/10.1007/s10964-010-9524-7>
- Fergus, S., & Zimmerman, M. A. (2005). Adolescent resilience: A framework for understanding healthy development in the face of risk. *Annual Review of Public Health*, 26, 399–419. doi:<http://dx.doi.org/10.1146/annurev.publhealth.26.021304.144357>
- la Haye, K., Green, H. D., Kennedy, D. P., Zhou, A., Golinelli, D., Wenzel, S. L., & Tucker, J. S. (2012). Who is supporting homeless youth? Predictors of support in personal networks. *Journal of Research on Adolescence*, 22, 604–616. doi:<http://dx.doi.org/10.1111/j.1532-7795.2012.00806.x>
- Hayes, S. C. (2000). *Hayes ability screening index (HASI) manual. Behavioral science in medicine*. Sydney: University of Sydney.
- Hodgson, K. J., Shelton, K. H., van den Bree, M. B., & Los, F. J. (2013). Psychopathology in young people experiencing homelessness: A systematic review. *American Journal of Public Health*, 103, e24–e37. doi:<http://dx.doi.org/10.2105/AJPH.2013.301318>
- Hubley, A. M., Russell, L. B., Palepu, A., & Hwang, S. W. (2014). Subjective quality of life among individuals who are homeless: A review of current knowledge. *Social Indicators Research*, 115, 509–524. doi:<http://dx.doi.org/10.1007/s11205-012-9998-7>
- Jansen, C., Wolf, J., & van der Heijden, P. G. M. (2007). *Omvang van de daklozenpopulatie in Zeeland* [Counting the homeless population in Zeeland, the Netherlands]. Nijmegen: UMC St Radboud.
- Johnson, K. D., Whitbeck, L. B., & Hoyt, D. R. (2005). Predictors of social network composition among homeless and runaway adolescents. *Journal of Adolescence*, 28, 231–248. doi:<http://dx.doi.org/10.1016/j.adolescence.2005.02.005>
- Julien, E., Guay, F., Senécal, C., & Poitras, S. (2009). Subjective psychological distress among young adults: The role of global and contextual levels of self-determined behavior. *Hellenic Journal of Psychology*, 6, 145–168.
- Kidd, S. A. (2003). Street youth: Coping and interventions. *Child and Adolescent Social Work Journal*, 20, 235–261. doi:<http://dx.doi.org/10.1023/A:1024552808179>
- Kipke, M. D., Unger, J. B., O'Connor, S., Palmer, R. F., & LaFrance, S. R. (1997). Street youth, their peer group affiliation and differences according to residential status, subsistence patterns, and use of services. *Adolescence*, 32, 655–669.
- Korf, D. J., Diemel, S., Riper, H., & Nabben, T. (1999). *Het volgende station Zwerfjongeren in Nederland* [The next station for homeless youth in the Netherlands]. Amsterdam: Thela Thesis.
- Krabbenborg, M. A. M., Boersma, S. N., van der Veld, W. M., van Hulst, B., Vollebergh, W. A. M., & Wolf, J. R. L. M. (2015). A cluster randomized controlled trial testing the effectiveness of houvast: A strengths-based intervention for homeless young adults. *Research on Social Work Practice*, 1–14. doi:<http://dx.doi.org/10.1177/1049731515622263>
- Krabbenborg, M. A. M., Boersma, S. N., & Wolf, J. R. L. M. (2013). A strengths based method for homeless youth: Effectiveness and fidelity of houvast. *BMC Public Health*, 13, 359–369. doi:<http://dx.doi.org/10.1186/1471-2458-13-359>
- Lam, J. A., & Rosenheck, R. A. (2000). Correlates of improvement in quality of life among homeless persons with serious mental illness. *Psychiatric Services*, 51, 116–118. doi:<http://dx.doi.org/10.1176/ps.51.1.116>
- Lee, B. A., Tyler, K. A., & Wright, J. D. (2010). The new homelessness revisited. *Annual Review of Sociology*, 36, 501–521. doi:<http://dx.doi.org/10.1146/annurev-soc-070308-115940>
- Lehman, A. F. (1988). A quality of life interview for the chronically mentally ill. *Evaluation and Program Planning*, 11, 51–62. doi:[http://dx.doi.org/10.1016/0149-7189\(88\)90033-X](http://dx.doi.org/10.1016/0149-7189(88)90033-X)
- Lehman, A. F., Kernan, E., & Postrado, L. (1995). *Toolkit for evaluating quality of life for persons with severe mental illness*. Baltimore, MD: Human Services Research Institute.
- Leveresen, I., Danielsen, A. G., Birkeland, M. S., & Samdal, O. (2012). Basic psychological need satisfaction in leisure activities and adolescents' life satisfaction. *Journal of Youth and Adolescence*, 41, 1588–1599. doi:<http://dx.doi.org/10.1007/s10964-012-9776-5>
- Lindsey, E. W., Kurtz, P. D., Jarvis, S., Williams, N. R., & Nackerud, L. (2000). How runaway and homeless youth navigate troubled waters: Personal strengths and resources. *Child and Adolescent Social Work Journal*, 17, 115–140. doi:<http://dx.doi.org/10.1023/A:1007558323191>
- Lippert, A. M., & Lee, B. A. (2015). Stress, coping, and mental health differences among homeless people. *Sociological Inquiry*, 85, 343–374. doi:<http://dx.doi.org/10.1111/soin.12080>

- Little, T. D., & Rhemtulla, M. (2013). Planned missing data designs for developmental researchers. *Child Development Perspectives*, 7, 199–204. doi:<http://dx.doi.org/10.1111/cdep.12043>
- Markland, D., Ryan, R. M., Tobin, V. J., & Rollnick, S. (2005). Motivational interviewing and self-determination theory. *Journal of Social and Clinical Psychology*, 24, 811–831. doi:<http://dx.doi.org/10.1521/jscp.2005.24.6.811>
- Maslow, A. H. (1970). *Motivation and personality* (2nd ed.). New York, NY: Harper & Row.
- Menard, S. (2002). *Applied logistic regression analysis. Sage university paper series on quantitative applications in the social sciences*. Thousand Oaks, CA: Sage.
- Miller, W. R. (1983). Motivational interviewing with problem drinkers. *Behavioural Psychotherapy*, 11, 147–172. doi:<http://dx.doi.org/10.1017/S0141347300006583>
- Miller, W. R., & Rollnick, S. (2002). *Motivational interviewing*. New York, NY: Guilford Press.
- Myers, R. H. (1990). *Classical and modern regression with applications* (2nd ed.). Boston, MA: Duxbury Press Belmont.
- Noom, M., & de Winter, M. (2001). *Op zoek naar verbondenheid: Zwerfjongeren aan het woord over de verbetering van de hulpverlening* [The search for connectedness: Homeless youth speak about improving social care]. Utrecht: Universiteit Utrecht/Nederlands Platform Zwerfjongeren.
- Patrick, H., Knee, C. R., Canevello, A., & Lonsbary, C. (2007). The role of need fulfillment in relationship functioning and well-being: A self-determination theory perspective. *Journal of Personality and Social Psychology*, 92, 434–457. doi:<http://dx.doi.org/10.1037/0022-3514.92.3.434>
- Planije, M., van 't Land, H., & Wolf, J. (2003). *Hulpverlening aan zwerfjongeren* [Social care for homeless youth]. Utrecht: Trimbos-instituut.
- Preacher, K. J. & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior Research Methods, Instruments, & Computers*, 36, 717–731.
- Proctor, C. L., Linley, P. A., & Maltby, J. (2009). Youth life satisfaction: A review of the literature. *Journal of Happiness Studies*, 10, 583–630. doi:<http://dx.doi.org/10.1007/s10902-008-9110-9>
- Reis, H. T., Sheldon, K. M., Gable, S. L., Roscoe, J., & Ryan, R. M. (2000). Daily well-being: The role of autonomy, competence, and relatedness. *Personality and Social Psychology Bulletin*, 26, 419–435. doi:<http://dx.doi.org/10.1177/0146167200266002>
- Ryan, R. M., & Deci, E. L. (2000a). Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary Educational Psychology*, 25, 54–67. doi:<http://dx.doi.org/10.1006/ceps.1999.1020>
- Ryan, R. M., & Deci, E. L. (2000b). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55, 68–78. doi:<http://dx.doi.org/10.1037/0003-066X.55.1.68>
- Ryan, R. M., La Guardia, J. G., Solky-Butzel, J., Chirkov, V., & Kim, Y. (2005). On the interpersonal regulation of emotions: Emotional reliance across gender, relationships, and cultures. *Personal Relationships*, 12, 145–163. doi:<http://dx.doi.org/10.1111/j.1350-4126.2005.00106.x>
- Ryff, C. D., & Keyes, C. L. M. (1995). The structure of psychological well-being revisited. *Journal of Personality and Social Psychology*, 69, 719–727. doi:<http://dx.doi.org/10.1037/0022-3514.69.4.719>
- Schalk, J., Reijnders, M. A. W., Vielvoye, R., Kouijzer, I., & de Jong, M. (2014). Decentralization in the Netherlands: From blueprints to tailor-made services? *The Hague Governance Quarterly*, 2, 1.
- Slesnick, N., Dashora, P., Letcher, A., Erdem, G., & Serovich, J. (2009). A review of services and interventions for runaway and homeless youth: Moving forward. *Children and Youth Services Review*, 31, 732–742. doi:<http://dx.doi.org/10.1016/j.childyouth.2009.01.006>
- Tabachnick, B. G., & Fidell, L. S. (2001). *Using multivariate statistics* (4th ed.). Needham Heights, MA: Allyn and Bacon.
- Tavecchio, L. W., Thomeer, M., & Meeus, W. (1999). Attachment, social network and homelessness in young people. *Social Behavior and Personality: An International Journal*, 27, 247–262. doi:<http://dx.doi.org/10.2224/sbp.1999.27.3.247>
- Thompson, S. J., Bender, K., Windsor, L., Cook, M. S., & Williams, T. (2010). Homeless youth: Characteristics, contributing factors, and service options. *Journal of Human Behavior in the Social Environment*, 20, 193–217. doi:<http://dx.doi.org/10.1080/10911350903269831>
- Thompson, S. J., McManus, H., Lantry, J., Windsor, L., & Flynn, P. (2006). Insights from the street: Perceptions of services and providers by homeless young adults. *Evaluation and Program Planning*, 29, 34–43. doi:<http://dx.doi.org/10.1016/j.evalprogplan.2005.09.001>
- Thompson, S. J., Pollio, D. E., Eyrich, K., Bradbury, E., & North, C. S. (2004). Successfully exiting homelessness: Experiences of formerly homeless mentally ill individuals. *Evaluation and Program Planning*, 27, 423–431. doi:<http://dx.doi.org/10.1016/j.evalprogplan.2004.07.005>
- Unger, J. B., Kipke, M. D., Simon, T. R., Johnson, C. J., Montgomery, S. B., & Iverson, E. (1998). Stress, coping, and social support among homeless youth. *Journal of Adolescent Research*, 13, 134–157. doi:<http://dx.doi.org/10.1177/0743554898132003>
- Unger, J. B., Kipke, M. D., Simon, T. R., Montgomery, S. B., & Johnson, C. J. (1997). Homeless youths and young adults in Los Angeles: Prevalence of mental health problems and the relationship between mental health and substance abuse disorders. *American Journal of Community Psychology*, 25, 371–394. doi:<http://dx.doi.org/10.1023/A:1024680727864>
- Uysal, A., Lin, H. L., & Knee, C. R. (2009). The role of need satisfaction in self-concealment and well-being. *Personality and Social Psychology Bulletin*, 36, 187–197. doi:<http://dx.doi.org/10.1177/0146167209354518>
- van der Laan, J., van Straaten, B., Boersma, S. N., Schrijvers, C., van de Mheen, D., & Wolf, J. (2013). *Daklozenprofielen in de vier grote steden en veranderingen in wonen, kwaliteit van leven en hulpbehoeften* [Profiles of homeless people in the four major cities of the Netherlands and changes in housing status, quality of life and care needs: Results from the second measurement of Coda-G4]. Nijmegen: IVO & UMC St Radboud.
- Véronneau, M. H., Koestner, R. F., & Abela, J. R. (2005). Intrinsic need satisfaction and well-being in children and adolescents: An application of the self-determination theory. *Journal of Social and Clinical Psychology*, 24, 280–292. doi:<http://dx.doi.org/10.1521/jscp.24.2.280.62277>
- Werner, E. E., & Smith, R. S. (1992). *Overcoming the odds: High risk children from birth to adulthood*. Ithaca: Cornell University Press.
- Whitbeck, L. B., Hoyt, D. R., & Bao, W. N. (2000). Depressive symptoms and co-occurring depressive symptoms, substance

- abuse, and conduct problems among runaway and homeless adolescents. *Child Development*, 71, 721–732. doi:<http://dx.doi.org/10.1111/1467-8624.00181>
- Wolf, J. (2007). *Nederlandse vertaling van het Quality of Life Instrument* (brief version). Nijmegen: UMC St Radboud.
- Wolf, J. (2012). *Herstelwerk een krachtgerichte basismethodiek voor kwetsbare mensen* [Recovery Work, a strengths-based approach for vulnerable people]. Nijmegen: UMC St Radboud.
- Wolf, J., Altena, A. M., Christians, M., & Beijersbergen, M. (2010). *Onderzoek naar dakloze jongeren in de centrumregio Zwolle* [A study on homeless youth in the region of Zwolle, The Netherlands]. Nijmegen: UMC St Radboud.
- Wolf, J., Burnam, A., Koegel, P., Sullivan, G., & Morton, S. (2001). Changes in subjective quality of life among homeless adults who obtain housing: A prospective examination. *Social Psychiatry and Psychiatric Epidemiology*, 36, 391–398. doi:<http://dx.doi.org/10.1007/s001270170029>