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The Determinants of Well-Being Among International Economic Immigrants: A Systematic Literature Review and Meta-Analysis

Anna Bak-Klimek · Thanos Karatzias · Lawrie Elliott · Rory Maclean

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Abstract Over the past decades migration has increased dramatically. Most of the scientific literature on immigrant mental health has focussed on stress, distress and mental illness. Less attention has been paid to positive aspects in particular mental well-being. The existing studies among immigrants who move for economic, educational or personal reasons have not been systematically reviewed and analysed to provide an overview of the factors which may affect their subjective well-being. Further, we do not know the extent to which the existing integrative theory of well-being, the Theory of Sustainable Happiness (Lyobumirsky et al. in *Review of General Psychology* 9:111–131, 2005) derived from research on general population is substantiated by research conducted with immigrants. To address these gaps we conducted a systematic review and meta-analysis of the determinants of well-being among international immigrants. Overall 11 studies met inclusion criteria for the meta-analysis. The analyses revealed that social support and dispositional factors (e.g. optimism, self-esteem) are strongly related to well-being whilst circumstantial factors such as income or duration of migration have weak and nonsignificant relationship with it. The findings are consistent with the Theory of Sustainable Happiness (2005) which suggests that circumstantial factors account for much less variance of well-being than dispositional factors because people tend to adapt to their circumstances. The study highlights the critical role of social support and intrapersonal factors in promoting and sustaining well-being of immigrants.

Keywords Happiness · Meta-analysis, migrants · Systematic review · Theory

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A. Bak-Klimek (✉) · T. Karatzias · L. Elliott · R. Maclean
Edinburgh Napier University, Sighthill Campus, Sighthill Court, Edinburgh EH11 4BN Scotland, UK
e-mail: A.Bak-Klimek@napier.ac.uk

Introduction

We live in a world shaped by human migration. In the last half century international migration has increased worldwide; in 2006, approximately 200 million people lived outside their place of birth, representing 3 % of the world population (International Organization for Migration 2008; Polgreen and Simpson 2009). Furthermore, the number of migrants is expected to rise to 230 million in the 2050s (International Organization for Migration 2008). Those who move not as a result of war, famine or other catastrophe but who cross borders in search of better economic, educational, or personal opportunities are the world's fastest growing group of migrants (International Organization for Migration 2008).

Most of the scientific literature suggests that migration is one of the most significant stressful life events (Bhugra 2004). Migrants face multiple stressors such as language barrier, new cultural norms, loss of social, familial and support networks, discrimination and underemployment (Khavarpour and Rissel 1997; Sim et al. 2007; Thompson et al. 2002; Weishaar 2008). These challenges can result in psychological distress such as anxiety and depression (Griffin and Soskolne 2003; Huan and Spurgeon 2006; Lindert et al. 2009; Sharma and Jaswal 2006). However, little attention has been paid to the more positive aspects of migration and in particular its effect on well-being. Evidence supports the notion that immigrants can be healthy, resilient and able to respond positively to the potential health hazards of migration (Ali 2002; Ng et al. 2005; Singh and Siahpush 2001; Stephens et al. 1994).

Well-Being and Migration

It is now recognised that mental health is not merely the absence of mental illness, but also the presence of the subjective well-being (SWB) (Keyes 2005). Subjective well-being (SWB) consists of three components: the presence of positive affect (happiness), cognitive dimension (life satisfaction) and absence of negative affect (Diener et al. 2002). There are two main types of theory of subjective well-being: top-down and bottom-up (Compton and Hoffman 2012; Diener 1984). According to the top-down model, individual differences in well-being are affected by broad personality and dispositional factors such as personality traits, locus of control and self-esteem (Diener and Biswas-Diener 2000). In contrast, the bottom-up model states that individual differences are the result of life experiences and circumstances such as income, education and marital status (Diener 1984). Empirical evidence indicates that well-being is the by-product of both sets of factors (Diener et al. 1999). A more recent theoretical account of subjective well-being - the Sustainable Happiness Model (Lyobumirsky et al. 2005) integrates top-down and bottom-up theories of well-being and treats them as complementary rather than mutually exclusive. The model specifies three major determinants of well-being: a 'set point', circumstantial/contextual factors and intentional activities. The 'set point' reflects relatively immutable intrapersonal, temperamental, and affective personality traits that change little over the lifespan (McCrae and Costa 1990). 'Intentional activities' refers to a broad category that involves the voluntary and effortful activities people do in their everyday lives. Lyobumirsky et al. (2005) differentiate between three types of intentional activities/effortful acts: cognitive such as avoiding social comparison, developing strategies for coping, behavioural ones such as nourishing social support and volitional ones

such as committing to goals. Finally, 'circumstances' refers to the "incidental but relatively stable factors of an individual's life" (Lyobumirsky et al. 2005, p. 117). They include life status variables such as marital status, occupational status, job security, income, health, and religious affiliations. According to the model; a set point and intentional activities account for most (90 %) variance in well-being and circumstances have little (10 %) contribution to well-being (Lyobumirsky et al. 2005). Changes in circumstances have limited potential for producing sustainable changes in well-being because people tend to adapt to constant circumstances (Lyobumirsky et al. 2005).

There has been an increasing amount of theoretical and empirical research on well-being in general populations and less attention, on migrants although there is a number of emerging studies which focus on this topic (e.g. Herrero and Fuente 2011; Amit 2010; Gokdemir and Dumludag 2012). However, these studies have not been systematically reviewed and analysed to provide an overview of the range of factors which may affect immigrants' subjective well-being and whether these differ across studies. Nor do we know the extent to which the existing integrative theory of well-being, Lyobumirsky's et al. (2005) theory of Sustainable Happiness (2005) which is based on the studies from the general population is substantiated by research conducted with migrants.

Review Questions

1. What factors affect well-being among immigrants?
2. To what extent is the integrative theory of Sustainable Happiness (2005) substantiated by the existing research among immigrants?

Review Methodology

Search Strategy

The literature search was carried out in July-August 2013. We conducted a comprehensive computerized search of the literature using nine English databases: AMED, CINAHL, MEDLINE, PsycINFO, ASSIA, ZETOX, PubMed, Psychology and Behavioural Sciences Collection and Sociological abstracts. A search strategy for each database was developed using combinations of the following key words: immigrant* OR migrant* or emigrant* AND well-being OR wellbeing OR happiness OR satisfaction (See Supplement 1). Citations from relevant research articles were followed up for potential research studies.

Inclusion/Exclusion Criteria for Systematic and Meta-Analysis Review

Each paper was assessed for relevance with reference to the following inclusion/exclusion criteria:

1. Type of paper: Primary research published in English in peer-reviewed journals.
2. Study design: Quantitative research including cross-sectional and cohort studies.
3. Population: The target population was international immigrants aged 16 and older. Populations included migrants moving for labour/economic, educational and personal reasons who worked full-time or part-time or were temporarily unemployed.

Immigrants under the age of 16 were excluded as they would be likely to be in full-time education, dependent on their parents/carers and not in employment. Also, studies investigating exclusively the elderly aged over 65 were not included as they would mostly be comprised of non-working population. Finally, refugees and asylum seekers were excluded due to their greater exposure to pre-migration trauma and subsequent risk for mental health distress.

4. Outcome: Studies including an outcome measure of subjective well-being were included. Only studies that provided a quantitative/statistical estimate (e.g., correlation or regression coefficient) of the association with well-being were included. Studies that focussed solely on examining negative mental health (mental illness, mental distress) were excluded.
5. Predictors/correlates: Broad domains of predictor/correlate variables; psychological, social, migration-related, demographic and economic predictors were considered.

Quality Assessment

The quality of the included studies was assessed according to a standardized tool, the Quality Assessment Tool for Quantitative Studies (Effective Public Health Practice Project, 2008). It consists of six components: (1) the extent to which study participants are representative of the target population, (2) study design, (3) control of confounding factors, (4) blinding of outcome assessors and participants, (5) reliability and validity of the data-collection tools, and (6) the number of withdrawals and drop-outs. The fourth criterion was considered not applicable for cross-sectional studies. For all studies, each component was rated as "strong," "moderate," or "weak" according to standard criteria. The component ratings were used to obtain an overall rating: "strong" when there was no weak component rating, "moderate" when there was one weak component rating, and "weak" when there were two or more weak component ratings.

Systematic Review

We employed the narrative synthesis approach to synthesise data extracted from the included studies. We assessed the characteristics of the original research and extracted the following data: participant characteristics (i.e. sample size, nationality, host country, gender, age, marital status, job status, education, duration of migration); aim of the study; well-being measures; predictors of well-being; theoretical framework, limitations and results.

Meta-Analysis

The process of conducting a meta-analysis included: 1. Calculating effect sizes, 2. Conducting basic and moderator analyses, 3. Estimating the effect of publication bias.

Calculating Effect Sizes

The Pearson's correlation coefficient, r, was used to assess the relationship between the predictor variables and the outcome. Cohen's (1988) standard definition of small (.10), medium (.30), and large (.50) effect sizes were used to interpret the effect size findings.

When the study did not report r for a given variable, common formulas were used to convert the individual study statistic to r as suggested by Lyons (1998) and Bowman (2012). If a study did not report the necessary values such as t, F, $\chi 2$, d, p, or Beta, it was excluded from the meta-analysis. If a study reported a separate coefficient *r* for independent samples (different immigrant groups) a combined weighted correlation was calculated so that each study provided only one effect size.

Conducting Basic and Moderator Analyses

Computer packages IBM SPSS Statistics 19 and R were used to conduct meta-analyses. Basic meta-analyses were performed using Field and Gilletts' (2010) syntax Meta Basic r.sps. Moderator analyses were conducted using Field and Gilletts' (2010) syntax launch meta mod r.sps and Meta Mod r.sps to investigate whether effect sizes for factors were moderated by different sample and study characteristics.

There are two ways to conceptualize meta-analysis: fixed- and random-effects models (Hedges 1992). In this study the Hunter-Schmidt (1990) random effects model was chosen since the available studies pulled samples from different populations, examined different factors, and examined a variety of outcome measures. As such, the random effects model suggests that these variations across studies could have an impact on the overall effect size. The random effects model, although less powerful as compared to the fixed effects model, will permit generalization beyond the studies included in the meta-analysis (Rosenthal 1995).

Heterogeneity Test

A chi-square ($\chi 2$) test was performed to determine the probability that the obtained effect sizes are not heterogeneous. A highly significant chi-square result would suggest that moderator variables may account for the heterogeneity of the effect sizes (Rosenthal and DiMatteo 2001). If the chi-square is not statistically significant, then no moderator variable is present; sample effect sizes are regarded as roughly equivalent and so population effect sizes are likely to be homogenous. However, these tests should be used cautiously as a means to decide on how to conceptualise data because they typically have low power to detect genuine variation in population effect sizes (Hedges and Pigott 2001). For this reason, the choice of model (random effects vs. fixed effects) in this study was determined a priori by the goal of the analysis rather than being a post hoc decision based on the data collected.

Confidence Intervals

The lower and upper limit confidence intervals around *r* and significance (*p*) values are reported. To interpret confidence intervals, the following guidelines are suggested:

- The smaller the range (<.10) between the upper and lower limit, the greater should be the confidence in the effect size value.
- The larger the range (>.10) between the upper and lower limits, the more cautiously the effect size should be interpreted.
- If the confidence interval includes 0, then the effect is not significant.

Estimating the Effect of Publication Bias

It is recommended that various techniques should be used to estimate the effect of publication bias (Field and Gillett 2010). In this meta-analysis publication bias was tested using two methods. First, the fail-safe N was computed. The N represents the number of additional studies with nonsignificant results that would have to be added to the sample in order to change the combined p from significant (at the 0.05 or 0.01 level of confidence) to not statistically significant (Rosenthal 1979). The tolerance level was also computed to estimate the number of irretrievable studies that possibly exist, based on the assumption that the number of unpublished studies is not five times greater than the number of published ones (Rosenthal and Rosnow 2008, p. 689). As a rule of thumb, it has been suggested that we regard as robust any combined results for which the tolerance level reaches 5 k +10, where k is the number of studies retrieved (Rosenthal 1991). Another method of determining the existence of publication bias is to draw a funnel plot. We produced funnel plots with confidence intervals superimposed (Field and Gillett 2010). If the data were unbiased, this plot would be funnel shaped around the dotted line and symmetrical. A sample with publication bias will lack symmetry (Field and Gillett 2010).

Results

Search Results

The combined search strategies yielded 5116 citations (Fig. 1). Then, a search was narrowed by applying specific exclusion criteria: qualitative studies, clinical samples, literature reviews, books reviews, aged (65 years & older), adolescence (13–17 years.), childhood (birth-12 year), school age (6–12 years), very old (85 years & older), preschool age (2–5 years) (21). In addition duplicates were removed and the remaining 1301 papers' titles and abstracts were reviewed. After the review a total of 1255 papers were judged not relevant because they did not meet inclusion criteria: they failed to report on original data and were theoretical in nature, they did not examine well-being as an outcome measure and they did not examine predictors/correlates of SWB. The remaining 46 full-text papers were retrieved for detailed assessment; one paper was relevant but full text was unavailable in English, 25 were excluded because they measured exclusively the presence/absence of negative mental health (distress) despite the title and abstract indicating investigation of well-being (positive feeling and experiences), 8 were excluded as they investigated migration with a country rather than international migration. A total of 12 studies met all the inclusion criteria and were included in the systematic review.

Quality of Available Evidence

The quality of the reviewed studies was variable (Table 1). As it is evident in Table 1. four of the cross-sectional studies were rated as "moderate" and eight as "weak". The main reason for such poor quality is the use of cross-sectional designs and unrepresentative samplings across studies. However, these are inherent problems in conducting

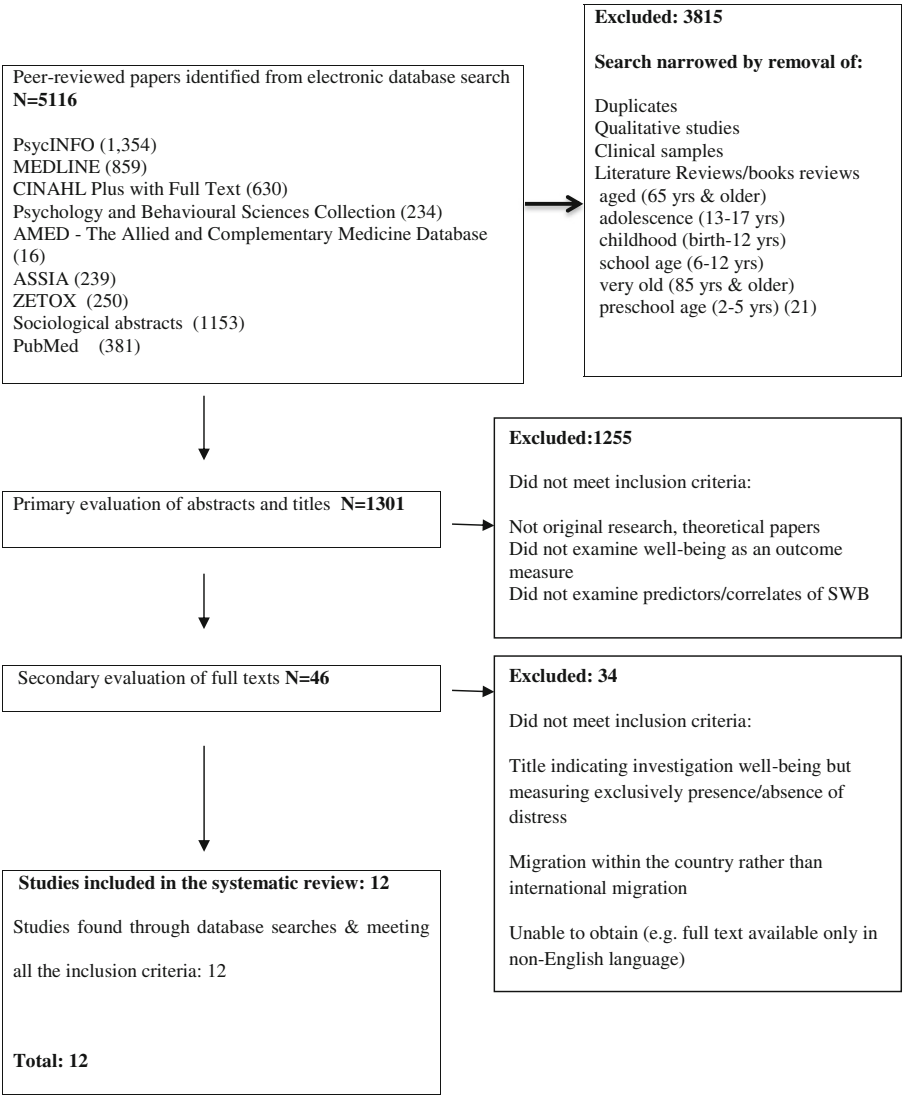

Fig. 1 Flow diagram of data retrieved at each stage of the review

research with immigrants. Immigrants, as a study population, are an example of a "hidden" or "hard-to-reach" population; there is often no readily-available database that researchers may access to identify, and subsequently contact immigrants (Faugier and Sargeant 1997). Furthermore, immigrants are likely to be more residentially and occupationally mobile than established populations which would be the key obstacle to tracking sample members in longitudinal studies (Black et al. 2003).

Narrative Synthesis of Studies

The main findings from the studies are reported in Table 2.

Table 1 Evaluation of the methodological quality of the 12 studies included in the review

Study	Component			Rating			Global rating
	Representativeness	Design	Confounders	Blinding	Methods	Dropout	
Cross-sectional studies							
Herrero and Fuente (2011)	Weak	Weak	Strong	N/A	Moderate	Moderate	Weak
Kimberley (2000)	Weak	Weak	Strong	N/A	Strong	Moderate	Weak
Vohra &Adair (2000)	Weak	Weak	Strong	N/A	Moderate	Moderate	Weak
Shin et al. (2007)	Weak	Weak	Strong	N/A	Strong	Moderate	Weak
Uskul & Greenglass (2005)	Moderate	Weak	Strong	N/A	Moderate	Moderate	Moderate
Garciıa et al. (2002)	Weak	Weak	Strong	N/A	Moderate	Moderate	Weak
Amit (2010)	Strong	Weak	Strong	N/A	Moderate	Moderate	Moderate
Gokdemir & Dumludag (2012)	Weak	Weak	Strong	N/A	Weak	Moderate	Weak
Dominguez-Fuentes and Hombrados-Mendieta (2012)	Strong	Weak	Strong	N/A	Strong	Moderate	Moderate
Tonsing (2013)	Weak	Weak	Strong	N/A	Strong	Moderate	Weak
Hombrados-Mendieta et al. (2012)	Strong	Weak	Strong	N/A	Strong	Moderate	Moderate
Polek et al. (2008)	Weak	Weak	Moderate	N/A	Strong	Moderate	Weak

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Study Characteristics

Participants and Setting

A total of 4 out of 12 studies were conducted in the USA and Canada (Kimberley 2000; Shin et al. 2007; Uskul and Greenglass 2005; Vohra and Adair 2000), 6 in Europe (Dominguez-Fuentes and Hombrados-Mendieta 2012; Garciıa et al. 2002; Gokdemir and Dumludag 2012; Herrero and Fuente 2011; Hombrados-Mendieta et al. 2013; Polek et al. 2008), 1 in Israel (Amit 2010) and 1 in Asia (Tonsing 2013). Immigrants in included studies predominantly migrated to Spain; those immigrants included Latin American immigrants (Dominguez-Fuentes and Hombrados-Mendieta 2012; Herrero and Fuente 2011; Hombrados-Mendieta et al. 2013), African immigrants (Dominguez-Fuentes and Hombrados-Mendieta 2012; Hombrados-Mendieta et al. 2013), Moroccan and Peruvian immigrants (Garciıa et al. 2002) and Asian, North American immigrants (Dominguez-Fuentes and Hombrados-Mendieta 2012). Polish, Russian, Hungarian (Polek et al. 2008), Turkish and Moroccan immigrants migrated to the Netherlands (Gokdemir and Dumludag 2012). Other immigrants included: Irish immigrants in Boston (Kimberley 2000), Indian immigrants in Canada (Vohra and Adair 2000), Korean immigrants in the United States (Shin et al. 2007), Turkish immigrants in Toronto, Canada (Uskul and Greenglass 2005), immigrants from Western Countries and from the FSU in Israel (Amit 2010) and Pakistanis and Nepalese in Hong Kong

Table 2 Summary of included studies

Author	Participants characteristics	Aims	Well-being measures	Predictors • Circumstantial & contextual factors • Personality & dispositional factors • Intentional activities (cognitive, behavioural, volitional factors)	Theoretical framework	Limitations • Design • Sampling • Measures	Main Results from Multivariate Analyses Significant Predictors of Well-being
Herrero and Fuente (2011)	Sample size: 350 Nationality Latin American Host country: Spain Gender: Females 56 %, Males 44 % Age : mean: 34.08 Marital status: 53.1 % married/ living in the relationship Job status: 74 % in employment, 26 % unemployed Education: University studies: 28.3 % No university studies: 71.7 % Duration of migration The mean length of stay 6 years	To test the influence of social integration on well-being	Emotional and cognitive dimension Items from European Social Survey (2007) (Diener et al. 1999)	Circumstantial & contextual • Socio-demographics: Age, gender, education, household income, marital status, job status, • Migration-related factors: legal status, years of residency, Personality & dispositional • *S*elf-esteem Intentional activities • *S*ocial support, social integration	Not explicitly mentioned	Design: Cross-sectional Sampling: Convenience Measures: No limitations identified	Circumstantial & contextual Household income and job status (positively correlated) Personality & dispositional Self-esteem (positively correlated) Intentional activities Social integration/social support (positively correlated)
Kimberley (2000)	Sample size: 100 Nationality Irish Immigrants Host country: the USA, Boston Gender: Females 73 %, Males: 27 % Age: mean: 31 Marital Status: married 38 %, non-married: 62 % Job status: N/A	To examine the extent to which demographic variables, the personality construct of resilience, and life satisfaction explain well-being	Cognitive dimension General Well-Being Schedule (GWB) (Dupuy 1978).	Circumstantial & contextual • Socio-demographics: age, gender, marital status, socioeconomic status (education, occupation, employment status, income) , • Migration-related factors: length of time in the USA and citizenship status Personality & dispositional • Personality construct of resilience	Not explicitly mentioned	Design: Cross-sectional Sampling: Convenience Measures: No limitations identified	Circumstantial & contextual A number of health care appointments (A fewer number of health care appointments was associated with higher well-being) Personality & dispositional Resilient personality (positively correlated)

Table 2 (continued)

Author	Participants characteristics	Aims	Well-being measures	Predictors • Circumstantial & contextual factors • Personality & dispositional factors • Intentional activities (cognitive, behavioural, volitional factors)	Theoretical framework	Limitations • Design • Sampling • Measures	Main Results from Multivariate Analyses Significant Predictors of Well-being
	Education: Graduates:43 % College 1 year: 35 % High school & less:22 % Duration of migration The mean length of stay: 6 years						
Vohra and Adair (2000)	Sample size: 189 Nationality Irish immigrants Host Country: Canada Gender: Females 42 % Males 58 % Age : 18–71 Job status: N/A Education Degree:82.6 % Without degree: 17.4 % Duration of migration Length of stay:1–37 years	To test if the level of life satisfaction will be predicted by a series of discrepancies between the evaluation of life accomplishments and a postulated set of standards	Cognitive dimension Satisfaction With Life Scale (Diener et al. 1985).	Circumstantial & contextual • Socio-demographics: age, education level, occupation, place of birth, socioeconomic status in Canada and in India, • Migration-related factors: Length of stay in Canada, age at immigration, immigration status in Canada and immigrants' plans for settlement in the future. Intentional activities • Comparison standards: Discrepancies between what immigrants have and 1.what one wants, 2. what one expected at the time of immigration, 3.expects in 15 years from now and 4 what others have • Social support	The multiple discrepancy theory Michalos (1985)	Design: Cross-sectional Sampling: Convenience Sample negatively skewed regarding educational attainments (most highly educated) Measures: No limitations identified	Circumstantial & contextual: None Intentional activities • comparison standards: Comparisons with significant others back home, with the members of the adopted community and other immigrants from India were significant predictors of well-being The discrepancy between what one has and what one expected at the time of immigration was correlated with life satisfaction. Immigrants who felt that their recalled expectations at the time of immigration were met were more satisfied than those who expected much more than they had. • Social support (negatively correlated)

Table 2 (continued)

Author	Participants characteristics	Aims	Well-being measures	Predictors • Circumstantial & contextual factors • Personality & dispositional factors • Intentional activities (cognitive, behavioural, volitional factors)	Theoretical framework	Limitations • Design • Sampling • Measures	Main Results from Multivariate Analyses Significant Predictors of Well-being
Shin et al. (2007)	Sample size: 147 Nationality Korean immigrants Host Country: the USA Gender: Females 64 %, Males: 37 % Age : mean:43.67 Marital status: Married 81 %, non-married 19 % Job status: Employed 69 %, unemployed 31 % Education: High School or less: 38 % College and more: 60 % No education: 2 % Duration of migration The mean length of stay: 15 years	To examine risks and resources of positive affect (happiness)	Cognitive and emotional dimension The MUNSH is a self-reported 3-point (1–3), 24-item (Kozma and Stones 1980)	Circumstantial & contextual • Socio-demographics: age, gender, education, marital status, perceived income comfort level Personality & dispositional • Sense of mastery Intentional activities • Social support		Design: Cross-sectional Sampling: Convenience Measures: No limitations identified	Circumstantial & contextual: None Personality & dispositional Sense of mastery (positively correlated) Intentional activities Social support (positively correlated)
Uskul, Greenglass, (2005)	Sample size: 181 Nationality Turkish immigrants Host country: Canada, Toronto Gender: Females 41 %, Males 59 % Age: mean 32.6 Marital status: N/A Job status: N/A Education: Degree holders & college, university graduates:89 % Duration of migration The mean length of stay 7.5 years	To examine predictors of wellbeing	Cognitive dimension 3-item Life Satisfaction Scale developed by Bachman, Kahn, Davidson and Johnston (1967).	Circumstantial & contextual • Socio-demographics: gender, age, education, marital status, place of birth. • Migration-related factors: length of stay in Canada Personality & dispositional • Optimism, Intentional activity • Coping	Not explicitly mentioned	Design: Cross-sectional Sampling: Convenience Dominant presence of highly educated participants Problems with generalizability of the results Measures: No limitations identified	Circumstantial & contextual Being married (positively correlated) Personality & dispositional Optimism (positively correlated) Intentional activity Proactive coping (positively correlated)

Table 2 (continued)

Author	Participants characteristics	Aims	Well-being measures	Predictors • Circumstantial & contextual factors • Personality & dispositional factors • Intentional activities (cognitive, behavioural, volitional factors)	Theoretical framework	Limitations • Design • Sampling • Measures	Main Results from Multivariate Analyses Significant Predictors of Well-being
Garcia et al. (2002).	Sample size: 105 Nationality Moroccan and Peruvian Host country: Spain Gender: Females 100 % Age: mean 30.5 Marital status: Married 45.6 % Job status: unemployed 23.7 % employed 76.3 % Education: Years of education mean:10.1 years Duration of migration The mean length of stay: not considered	To examine predictors of well-being	Cognitive and emotional dimension Scale of General Psychological Well-being by Sanchez-Canovas (1994)	Circumstantial & contextual • Demographics: education & marital status Personality & dispositional • Locus of control Intentional activities • Social support	Not explicitly mentioned	Design: Cross-sectional Sampling: No information provided Measures: The tool for assessing locus of control showed very low internal consistency level	Circumstantial & contextual Education (positively associated) Personality & dispositional Locus of control (positively correlated) Intentional activities Social network characteristics (positively correlated)
Amit (2010)	Sample size: 831 Nationality Jewish immigrants from western countries (386) and the Former Soviet Union (FSU) (485) Host Country: Israel Gender: *Western Immigrants* Females 43.6 % Males 57.4 % *FSU Immigrants*: Females 45.9 % Males 54.1 % Age Western Immigrants: 38.63	To understand the factors that explain well-being	Cognitive dimension General satisfaction with life in Israel, rated on a scale of 1–6.	Circumstantial & contextual • Socio-demographics: academic education, economic status • Migration-related factors: country of origin, number of years in Israel, perception of personal Hebrew language proficiency, Push/pull immigration motives Intentional activities • Religiosity level	Not explicitly mentioned	Design: Cross-sectional Sampling: No limitations identified Measures: No limitations identified	Circumstantial & contextual: For Western immigrants: standard of living, academic degree (negative correlation), Hebrew proficiency, ethnic neighbourhood (positive association) significantly predicted life satisfaction For FSU immigrants: standard of living (positive association) Intentional activities Religiosity level (positively correlated for both groups of immigrants)

Table 2 (continued)

Author	Participants characteristics	Aims	Well-being measures	Predictors • Circumstantial & contextual factors • Personality & dispositional factors • Intentional activities (cognitive, behavioural, volitional factors)	Theoretical framework	Limitations • Design • Sampling • Measures	Main Results from Multivariate Analyses Significant Predictors of Well-being
	FSU immigrants: 39.70 Marital status: N/A Job status: N/A Education *Western Immigrants* Academic degrees 61 % *FSU immigrants:* Academic degrees 43.9 % Duration of migration *Western Immigrants*: 6.19 years *FSU immigrants*: 14 years						
Gokdemir & Dumludag (2012)	Sample size: 207 Nationality Turkish and Moroccan Host Country: Netherlands Gender *Turkish immigrants*: Females 41.4 %, Males 58.6 % *Moroccan immigrants* Females 57.3 % Males 42.7 % Age: 16–40 Marital Status: N/A Job status: N/A Education: N/A Duration of migration The length of stay: not considered	To investigate the role of several socio-economic and non-economic factors to explain the differences of happiness levels in two immigrant groups: Turkish and Moroccan Immigrants in the Netherlands	Cognitive dimension 1 question :how satisfied are you with your life as a whole these days?	Circumstantial & contextual • Socio-demographics absolute income, marital status, education Intentional activities: • Relative income • Religiosity	Social Comparison Discrepancy theory	Design: Cross-sectional Sampling: No information about sampling provided Measures: Well-being measured using one question	Circumstantial & contextual Marital status, singles are more satisfied than couples only in Moroccan case Education was statistically significant in both groups but the relation was positive in Turkish case, whereas the relation between education and life satisfaction was negative in Moroccan group Absolute income: for Moroccan sample absolute income predicted well-being; positively correlated with well-being

Table 2 (continued)

Author	Participants characteristics	Aims	Well-being measures	Predictors • Circumstantial & contextual factors • Personality & dispositional factors • Intentional activities (cognitive, behavioural, volitional factors)	Theoretical framework	Limitations • Design • Sampling • Measures	Main Results from Multivariate Analyses Significant Predictors of Well-being
							Intentional activities Relative income: for Turkish and Moroccan sample relative income predicted well-being; was significantly and negatively correlated with well-being Religiosity level was a significant factor explaining differences of well-being levels in Moroccan group
Dominguez-Fuentes, Hombrados-Mendieta, 2012	Sample size: 180 Nationality Latin American, African, European, Asian, North American Host Country: Spain, Malaga Gender: Females 100 % Age: mean 35.3 Marital status: Married: 40.6 %, Non-married 59.94 % Job status: Employed 39.3 %, Unemployed 60.7 % Education Secondary & primary education: 68. 9 % University education: 25.5 % No education:5.6 %	To examine association between perceived social support and well-being	Emotional dimension Oxford Happiness Questionnaire (Hills and Argyle 2002)	Circumstantial & Contextual • Socio-demographics: employment status • Migration-related: duration of migration Intentional activities Social support	Not explicitly mentioned	Design: Cross-sectional Sample: Convenience, exclusive focus on women Measures: No limitations identified	Circumstantial: Having a job (positively correlated) Duration of migration (positively correlated) Intentional Activities Social support (positively correlated)

Table 2 (continued)

Author	Participants characteristics	Aims	Well-being measures	Predictors • Circumstantial & contextual factors • Personality & dispositional factors • Intentional activities (cognitive, behavioural, volitional factors)	Theoretical framework	Limitations • Design • Sampling • Measures	Main Results from Multivariate Analyses Significant Predictors of Well-being
	Duration of migration Less than a year:28.9 % 1–2 years: 41.1 % 3 and more:30 %						
Tonsing 2013	Sample size: 447 Nationality 229 Pakistanis 218 Napalese Host Country: China, Hong Kong Gender *Pakistanis*: 55 % Females, 45 % Males *Nepalese*: 48.8 % Females 51.2 % Males Age: *Pakistanis:* mean 30.60 *Napalese*: mean 32.27 Marital status *Pakistanis*: 70 % married *Napalese*: 71.6 % married Job status: *Pakistanis:* 48 % in employment 52 % unemployed *Nepalese:* 68.3 % in employment 31.7 % unemployed	To explore the relationship between life satisfaction and factors such as perceived social support and certain socio-demographics	Cognitive dimension Satisfaction with Life Scale (SWLS) Diener, Emmons, Larsen, and Griffin (1985) to	Circumstantial & Contextual • Socio-demographics: Age, gender, education, employment status, income • Migration-related: duration of migration Intentional Activities • Social support	Not explicitly mentioned	Design: Cross-sectional Sampling: Convenience Measures: No limitations identified	Pakistanis: Circumstantial: Educational attainment (positively correlated) Duration of migration (negatively correlated) Intentional Activities: Social Support (positively correlated) Nepalese: Circumstantial factors: None Intentional activities: Social support (positively correlated)

Table 2 (continued)

Author	Participants characteristics	Aims	Well-being measures	Predictors • Circumstantial & contextual factors • Personality & dispositional factors • Intentional activities (cognitive, behavioural, volitional factors)	Theoretical framework	Limitations • Design • Sampling • Measures	Main Results from Multivariate Analyses Significant Predictors of Well-being
	Education High school degree and higher: *Pakistanis*: 64.7 % *Nepalese*:77.10 % Duration of migration Pakistanis: mean 13.16 years Nepalese:10.07 years						
Hombrados-Mendieta, Gomez-Jacinto, Dominguez-Fuentes, Garcia-Leiva, 2013	Sample size: 700 Nationality: Latin American 28 % Eastern Europeans, and 14 % African Host Country: Spain, Malaga Gender: Females: 54 %, Males 46 % Age: mean 31.32 Marital status: 33.2 % married and in partnership Job status: 56.5 % in employment 43.5 % unemployed Education: University & College: 18.8 % Duration of migration Mean: 7.30years	To analyse the influence of the sense of community (SOC) on satisfaction with life (SWL)	Cognitive dimension Satisfaction With Life Scale (SWLS; Pavot and Diener 1993).	Intentional activities: • Sense of community	Not explicitly mentioned	Design: Cross-sectional Sampling: No limitations identified Measures: No limitations identified	Intentional activities: Sense of community (positively correlated)
Polek et al. 2008	Sample size: 631 Nationality 408 Polish 100 Russian 123 Hungarian Host country: Netherlands	To examine the relationship between demographic factors, attachment styles and satisfaction with life	Cognitive dimension Satisfaction With Life Scale (SWLS) by Diener et al. (1985)	Circumstantial & contextual • Demographics: education • Migration-related: duration of migration & age at migration Intentional activities: • Social support	Not explicitly mentioned	Design: Cross-sectional Sampling: Convenience Measures: No limitations identified	Circumstantial & Contextual Education (positively correlated) Duration of migration (positively correlated) Age at migration (negatively correlated)

Table 2 (continued)

Author	Participants characteristics	Aims	Well-being measures	Predictors • Circumstantial & contextual factors • Personality & dispositional factors • Intentional activities (cognitive, behavioural, volitional factors)	Theoretical framework	Limitations • Design • Sampling • Measures	Main Results from Multivariate Analyses Significant Predictors of Well-being
	Gender: Polish: 68 % Females Russian: 72 % Females Hungarian: 76 % Females Age Polish: 33.50 Russion:36.71 Hungarian:36.51 Marital status: N/A Job status: N/A Education: N/A Duration of migration: Polish: 6.54 years Russian:6.20 years Hungarian:13.79 years			Dispositional: • Attachment style			Dispositional: Secure attachment (positively correlated)

(Tonsing 2013). Overall, a total sample consisted of 4068 immigrants across studies. All participants were at the age of 16–71. Most samples included participants of both sexes although the samples of two studies consisted exclusively of immigrant women (Dominguez-Fuentes and Hombrados-Mendieta 2012; Garcıa et al. 2002). Non-probability convenience sampling was the most commonly used sampling method (Dominguez-Fuentes and Hombrados-Mendieta 2012; Herrero and Fuente 2011; Kimberley 2000; Polek et al. 2008; Shin et al. 2007; Tonsing 2013; Uskul and Greenglass 2005; Vohra and Adair 2000). Only two studies (Amit 2010; Hombrados-Mendieta et al. 2013) employed probability sampling such as stratified sampling method and random route sampling. The remaining two studies (Garcıa et al. 2002; Gokdemir and Dumludag 2012) failed to provide information about a sampling strategy.

Well-Being Measures

Eight studies measured only a cognitive aspect of well-being (life satisfaction) (Amit 2010; Gokdemir and Dumludag 2012; Hombrados-Mendieta et al. 2013; Kimberley 2000; Polek et al. 2008; Tonsing 2013; Uskul and Greenglass 2005; Vohra and Adair 2000). Of those, six studies used standardised measures: The Satisfaction With Life Scale (SWLS) (Diener et al. 1985), Satisfaction With Life Scale (SWLS; Pavot and Diener 1993), Life Satisfaction Scale (Bachman et al. 1967) and the General Well-Being Schedule (GWB) (Dupuy 1978) (Kimberley 2000; Uskul and Greenglass 2005; Vohra and Adair 2000) and two used non-standardised measures asking a single global question whether immigrants are satisfied on a scale 1–6 (Amit 2010; Gokdemir and Dumludag 2012). One study (Dominguez-Fuentes and Hombrados-Mendieta 2012) measured only the emotional component of well-being i.e.- happiness using Oxford Happiness Questionnaire (Hills and Argyle 2002). The remaining three studies measured both components of subjective well-being: emotional and cognitive (Garcıa et al. 2002; Herrero and Fuente 2011; Shin et al. 2007). The measures included in these three studies included: items from European Social Survey (2007) which asked participants to what degree did they consider themselves happy at the time of the study (emotional component) and about their general satisfaction with life (cognitive component) (Herrero and Fuente 2011), The MUNSH, a self-reported 24-item instrument (Kozma and Stones 1980) (Shin et al. 2007) and the Scale of General Psychological Well-being by Sanchez-Canovas (1994) (Garcıa et al. 2002).

Theoretical Framework

Two out of twelve studies explicitly used a theoretical framework for well-being. The study by Gokdemir and Dumludag (2012) used the Social Comparison Theory (Festinger 1954) which explains how individuals evaluate their own opinions and abilities by comparing themselves to others. The study by Vohra and Adair (2000) employed the Multiple Discrepancy Theory of Michalos (1985) which expands on the social comparison theory and argues that individuals not only compare themselves to other people but also to other standards such as past conditions, ideal levels of satisfaction, and needs or goals. Both theories offer a cognitive approach to our understanding of well-being. These theoretical accounts are applicable in explaining levels of well-being of migrants since migrants tend to compare their post-migration

reality to their pre-migration life or current life of their friends and family in their home country (Melzer and Muffels 2012). The remaining ten studies did not use a theoretical framework explicitly and they focussed predominantly on examining a wide range of bottom-up (contextual) factors of well-being such as socio-demographics and migration-related factors and explored a narrow range of personality and intentional activities (See Table 2).

Measures Used as Predictors of Well-Being

Circumstantial & Contextual Factors: Socio-Demographics

Included studies incorporated a wide range of socio-demographics such as age (Herrero and Fuente 2011; Kimberley 2000; Shin et al. 2007; Tonsing 2013; Uskul and Greenglass 2005; Vohra and Adair 2000), gender (Herrero and Fuente 2011; Kimberley 2000; Shin et al. 2007; Tonsing 2013; Uskul and Greenglass 2005), marital status (Garciıa et al. 2002; Gokdemir and Dumludag 2012; Herrero and Fuente 2011; Kimberley 2000; Shin et al. 2007; Uskul and Greenglass 2005) education attainment (Amit 2010; Garciıa et al. 2002; Gokdemir and Dumludag 2012; Herrero and Fuente 2011; Kimberley 2000; Polek et al. 2008; Shin et al. 2007; Tonsing 2013; Uskul and Greenglass 2005; Vohra and Adair 2000), income and standard of living (Amit 2010; Gokdemir and Dumludag 2012; Herrero and Fuente 2011; Kimberley 2000; Shin et al. 2007; Tonsing 2013; Vohra and Adair 2000).

Circumstantial & Contextual Factors: Migration-Related Factors

Migration-related factors examined in the studies included age at immigration (Polek et al. 2008; Vohra and Adair 2000), whose decision it was to migrate (Vohra and Adair 2000), language proficiency, immigration motives (Amit 2010), and duration of migration (Amit 2010; Dominguez-Fuentes and Hombrados-Mendieta 2012; Herrero and Fuente 2011; Kimberley 2000; Polek et al. 2008; Uskul and Greenglass 2005; Vohra and Adair 2000).

'Set point': Personality and Dispositional Factors

Studies examined the following personality and dispositional factors: self-esteem (Herrero and Fuente 2011), resilience (Kimberley 2000), sense of mastery (Shin et al. 2007), optimism (Uskul and Greenglass 2005), attachment style (Polek et al. 2008) and locus of control (Garciıa et al. 2002).

Intentional Activities (Cognitive, Behavioural)

Cognitive factors such as comparison standards (Gokdemir and Dumludag 2012; Vohra and Adair 2000), and coping strategies (Uskul and Greenglass 2005) were examined. Many studies examined the perceived level of support from the respondents' social networks (Dominguez-Fuentes and Hombrados-Mendieta 2012; Herrero and Fuente 2011; Polek et al. 2008; Shin et al. 2007; Vohra and Adair 2000) , social integration

(Herrero and Fuente 2011) or sense of community (Hombrados-Mendieta et al. 2013). Two studies also examined religiosity (Amit 2010; Gokdemir and Dumludag 2012).

Predictors of Well-Being

Circumstantial and Contextual: Socio-Demographics and Migration-Related

None of the migration-related variables such as language proficiency, duration of migration, age at migration emerged as a significant predictor in the studies. Regarding socio-demographic variables; all studies that examined age (Herrero and Fuente 2011; Kimberley 2000; Shin, et al. 2007; Uskul and Greenglass 2005; Vohra and Adair 2000) and gender (Herrero and Fuente 2011; Kimberley 2000; Shin et al. 2007; Uskul and Greenglass 2005) consistently found that these variables were not significant predictors of well-being. Marital status was found to be a significant predictor in two studies (Gokdemir and Dumludag 2012; Uskul and Greenglass 2005). In the study by Uskul and Greenglass (2005) being married was associated with increased levels of well-being and in the study by Gokdemir & Dumludag (2012) being married was associated with lower levels of well-being for Moroccan immigrants. Although education was included in all eight studies, only three of them (Amit 2010; Garciıa et al. 2002; Gokdemir and Dumludag 2012) reported that education status was a significant predictor of well-being. The study by Garcia et al. (2002) found that a higher education level was associated with increased levels of well-being and the study by Amit, (2010) reported that a lower education level was associated with a higher level of well-being for Western immigrants. Also, in the study by Gokdemir and Dumludag (2012) a higher education level predicted higher life satisfaction for Turkish immigrants but for Moroccan immigrants, a lower education level was associated with higher life satisfaction. In terms of income, it emerged as a significant predictor in three studies (Amit 2010; Gokdemir and Dumludag 2012; Herrero and Fuente 2011). The three studies found that a higher income was associated with higher well-being levels.

Personality & Dispositional Factors ‘(set point’)

All studies that examined personality and dispositional factors found these factors to be significant predictors of well-being. A greater sense of mastery (Shin et al. 2007), a greater perception of personal control (Garciıa, et al. 2002), a higher level of self-esteem (Herrero and Fuente 2011), resilience (Kimberley 2000), optimism (Uskul and Greenglass 2005) and a secure attachment style (Polek et al. 2008) were associated with higher levels of well-being.

Intentional Activities

Cognitive Factors: Coping Strategies & Comparison Processes

All the studies that examined cognitive factors found that these factors predicted significantly levels of well-being. For instance, the studies that examined the role of comparison processes (Gokdemir and Dumludag 2012; Vohra and Adair 2000) found

that comparisons with significant others back home, with the members of the adopted community and other immigrants were significant predictors of well-being. In addition, use of proactive coping strategies predicted greater levels of well-being (Uskul and Greenglass 2005).

Behavioural Factors: Nourishing Social Support

All studies that examined the association between social network elements such as social support or social integration in the community (Garciıa, et al. 2002; Herrero and Fuente 2011; Shin et al. 2007; Vohra and Adair 2000) and well-being consistently found that social support and integration are significant predictors of well-being. In all these studies apart from the study by Vohra and Adair (2000) a greater social support predicted higher levels of well-being.

Statistical Synthesis of Outcomes

Basic Meta-Analyses

Overall 11 studies met the final inclusion criteria for the meta-analysis. The study by Gokdemir and Dumludag (2012) did not report sufficient information to calculate *r* and thus, had to be excluded from the meta-analysis. Meta-analyses were conducted on eight separate predictors of well-being: circumstantial/contextual factors such as age, gender, education, income, marital status and duration of migration; intentional activities (behavioural factor) such as social support; and dispositional/personality factors (set point). Although different types of dispositional factors were included in the different studies, they were combined in the meta-analysis. Given the aim of the study was to test the extent to which circumstantial factors, intentional activities (cognitive, behavioural factors) and dispositional factors (set point) contribute to well-being it was important to obtain effect sizes for all three categories of factors. The basic meta-analyses (see Table 3) results suggest that circumstantial factors have a very small effect

Table 3 Basic meta-analyses results. Hunter Schmidt random-effects model

Name of predictor	*K* number of studies	Mean effect size (*r*)	95 % credibility interval		Test of homogeneity significance	
			Lower	Upper		
Circumstantial factors						
Age	7	.032	−.390	.455	$\chi 2$ (6)=108.364	$p<.05$*
Gender	6	.006	−.051	.062	$\chi 2$ (5)=7.066	
Education	7	.116	−.205	.437	$\chi 2$ (6)=58.972	$p<.05$*
Income	6	.215	−.070	.500	$\chi 2$ (5)=52.538	$p<.05$*
Marital status	4	.044	−.029	.117	$\chi 2$ (3)=2.664	
Duration of migration	9	−.042	−.343	.259	$\chi 2$ (8)=79.766	$p<.05$*
Behavioural						
Social support	7	.418	.009	.827	$\chi 2$ (6)=139.358	$p<.05$*
Dispositional factors	6	.362	.053	.671	$\chi 2$ (5)=55.014	$p<.05$*

on well-being (r=.01–.20). The effect of social support (.42) and dispositional factors (.36) was found to be moderate.

Moderator Analyses

Given the heterogeneity among the effect sizes, moderator analyses were conducted. The moderating effects of the following sample and study characteristics were examined: sampling type (probability vs. nonprobability), gender of included participants (males and females vs. only females) and outcome measure (emotional/happiness vs. cognitive/life satisfaction vs. emotional and cognitive). Moderator analyses (See Table 4) show that there was still an overall small effect for circumstantial factors (r=.02 -.22), however; confidence intervals (for all the circumstantial factors) encompassed a zero value. There was a strong positive effect of social support (r=.46) and dispositional factors (r=.51) on well-being. Sampling type significantly moderated the effect of all the variables included in the analyses. Gender significantly moderated the effect of all the variables apart from duration of migration and marital status and outcome measure moderated the effect of social support on well-being.

Publication Bias

Computed fail-safe N indicates that the file drawer problem was unlikely to threaten the results of this review. The fail-safe N for social support predictor (1116) and dispositional

Table 4 Moderator analyses aimed to determine if study characteristics such as outcome measure, sampling type and gender of participants influence the effect sizes for the factors: age, income, education, marital status, duration of migration, social support and dispositional factors

	Moderators		
	Outcome measure	Sampling type	Gender
Predictor	Mean effect size r significance	Mean effect size r significance	Mean effect size r significance
Age	.22 (−.097 .500) $\chi 2$ (1)=2.68,	.22 (−.097−.500), $\chi 2$ (2)=62.84 p<.05*	.22 (-.097−.500) $\chi 2$ (1)=47.11, p<.05*
Income	.17 (−.040 .356) $\chi 2$ (1)=.20	.17 (−.040−.356) $\chi 2$ (1)=3.86 p<.05*	N/A
Education	.19 (−.052 .414) $\chi 2$ (1)=2.78	.19 (-.052 .414) $\chi 2$ (1)=76.07 p<.05*	.19 (-.052 .414) $\chi 2$ (1)=76,07, p<.05*
Marital status	.04 (−.075 .162) $\chi 2$ (1)=9.28	N/A	.04 (-.075 .162) $\chi 2$ (2)=1.99
Duration of migration	.02 (−.120 .166) $\chi 2$ (2)=.89	.02 (−.120 .166) $\chi 2$ (1)=8.534 p<.05*	.02 (−.120 .166) $\chi 2$ (1)=1.02
Social support	.46 (.173 .677) $\chi 2$ (2)=7.93 p<.05*	.46 (.173 .677) $\chi 2$ (2)=23.190 p<.05*	.46 (.173 .677) $\chi 2$ (1)=5.87 p<.05*
Dispositional factors	.51 (.122 .760) $\chi 2$ (1)=1.71	.51 (.122 .760) $\chi 2$ (1)=149.77, p<.05*	.51 (.122 .760) $\chi 2$ (1)=149.77 p<.05*

N/A moderator analyses were not conducted as the examined studies samples did not differ in terms of these sample characteristics

factors (695) exceeded the tolerance levels of 45 and 40, respectively. Thus, the original estimates are considered robust. However, the funnel plots (See Supplement 2) show signs of possible publication bias. Both plots show that some effect sizes are very discrepant from the rest which indicates bias.

Discussion

The first aim of the study was to identify significant predictors of well-being among international immigrants. The narrative synthesis shows that all dispositional characteristics included in the review such as optimism, resilience or self-esteem are significant predictors of well-being. It also demonstrates that intentional activities (cognitive and behavioural factors) are very important for immigrants' well-being. For instance, it acknowledges that proactive coping mechanisms are important for well-being of migrants who often have to deal with many stressors associated with their immigrant status (Uskul and Greenglass 2005). Also judgments of immigrants' life situation compared to others such as their peers back home or other immigrants or to what it could have been had they remained in their native country are crucial to determining immigrants' own satisfaction with life (Vohra and Adair 2000). It confirms that feeling connected and supported by others is a fundamental to a positive experience of immigration. Social support and integration in the community might help immigrants to not only acquire new resources that may promote well-being but also enhance their chances of coping successfully in difficult life situations, reducing again the levels of stress (Cohen et al. 2000). The review also demonstrates that migration-related factors such as length of migration or age at migration failed to account for variance in well-being in all the studies (e.g. Herrero and Fuente 2011; Kimberley 2000; Vohra and Adair 2000). Furthermore, although the review shows that socio-demographics such as gender or age were not significant predictors of well-being across the studies, there is inconsistency in relation to the role of socio-demographic factors such as marital status, income and education. For instance marital status did not have a significant effect on well-being for Latin American immigrants (Herrero and Fuente 2011), Irish immigrants (Kimberley 2000) and Korean immigrants (Shin et al. 2007), however, in the study by Uskul and Greenglass (2005) and the study by Gogdemir and Dumludag (2012) marital status significantly predicted well-being. In terms of income, although it did not matter for well-being of many immigrant groups it emerged as a significant predictor in the studies by Amit (2010), Gokdemir and Dumludag, (2012) and Herrero and Fuente (2011).

Meta-analyses results support the findings of the narrative review. Meta-analyses confirm that dispositional factors and intentional activities (social support) have a strong effect on well-being while the effects of circumstantial/contextual factors such as duration of migration, age and gender are very modest and non-significant. The review findings are in line with the evidence from non-immigrant populations. For instance, greater levels of social support were highly correlated with an increase in well-being in a meta-analysis by Wang (1998). Also, circumstantial factors were weakly related to increases in well-being. For instance, Argyle (1999) concluded that chronological age has a small positive correlation with subjective well-being and education has an even smaller correlation with well-being than does age. Furthermore, the relationship between marital status and well-being was also weak (r=.14) in a

meta-analysis which included 58 empirical studies (Hadring-Hidore et al. 1985). Similarly, the relationship between income and well-being was weak e.g. De Neve and Cooper (1999) quote a mean correlation coefficient between income and subjective well-being of 0.17 (over 85 independent samples) which is exactly the same effect size found in the present meta-analysis. The effects of income on well-being are likely to be mediated by psychological processes such as comparison processes (Diener et al. 1999). This is very explicit in the study by Gokdemir and Dumludag (2012) which demonstrated that Turkish immigrants who had high incomes did not consider their exact incomes but instead they tended to make upward income and social status comparisons which reduced their life satisfaction levels.

The second aim of the study was to determine the extent to which the Sustainable Happiness Model (2005) is substantiated by the existing research among immigrants. The findings of the narrative synthesis and meta-analyses acknowledge that personality/dispositional factors such as optimism or self-esteem and intentional activities (cognitive/behavioural factors) such as social support are more powerful in explaining the variability of well-being levels than circumstantial factors. As such, the findings provide support for an integrative theory - the Theory of Sustainable Happiness (Lyobumirsky et al. 2005). In line with this conceptualisation, the evidence from the present study confirms that personality and intentional activities account for the majority of variance in well-being. On the other hand, circumstantial factors such as migration related and socio-demographic factors are of secondary importance due to "hedonic adaptation" which is people's tendency to adapt to constant circumstances e.g. income or marital status (Lyobumirsky et al. 2005). According to the theory the changes in circumstances such as economic or social may significantly improve immigrants' well-being at the beginning of migration period but this effect may erode over time (Lyobumirsky et al. 2005). Hedonic adaptation is likely to have occurred because samples of the studies included mostly immigrants who have been in the host country for a long period of time. Unfortunately, the reviewed studies did not test if circumstantial factors had a different impact on well-being depending on the immigrants' duration of stay in a foreign country. This might have helped clarify some inconsistencies across the studies e.g. why income was a significant predictor of well-being in three studies only (Amit 2010; Gokdemir and Dumludag 2012; Herrero and Fuente 2011).

Strengths and Weaknesses of the Present Review

To the best of our knowledge this is the first systematic review and meta-analysis that considered the relationship between a wide range of factors and well-being among international migrants who moved for economic, educational or personal reasons. It identified the relevant weight of factors that may have an effect on immigrants but also demonstrated the extent to which these studies support an integrative theory of well-being.

However, there are some limitations. First of all, the methodological quality of the included studies was not optimal for instance most were based on weaker designs such as cross-sectional surveys and convenience samples. Furthermore, although we have identified three moderator variables in our meta-analyses there are other potential moderators such as duration of migration which could not be included in the analyses

because of inconsistency of measurement across studies. In addition, the reviewed studies focussed mostly on examining circumstantial factors such as migration-related and socio-demographic factors and examined only a narrow number of dispositional factors and intentional activities. For instance, coping strategies were examined only in one study and as a result, meta-analyses for this predictor could not be conducted. Finally, although we obtained strong and significant effects for social support and dispositional factors the funnel plots show some evidence of publication bias.

Conclusion

The meta-analysis reveals that dispositional factors such as optimism, self-esteem and cognitive/behavioural factors such as social support are strong and significant determinants of well-being in immigrants. It also confirms that circumstantial factors have modest and insignificant effect on well-being. Overall, the findings support evidence from general populations that circumstantial factors account for little variance of well-being as compared to psychological factors. As such the findings of the review are in line with the integrative theory of well-being – the Sustainable Happiness Model (Lyobumirsky et al. 2005) developed from evidence in non-migrant populations. Although this review demonstrated some clear trends and patterns within the literature, it also highlighted many of the gaps that currently exist in the literature of immigrant well-being which should be addressed in future research

Implications for Research

Future research should focus on longitudinal rather cross-sectional data on determinants of well-being among migrant populations. A longitudinal design would be a more powerful method to disentangle causes and outcomes especially when it comes to a dynamic and evolving process such as migration. For instance, it would allow to test baseline (pre-migration) levels of well-being and compare levels of well-being before and after the migration. Secondly, future studies should attempt to generate a representative sample of migrants. Furthermore, given the modest and non-significant effects of circumstantial factors on well-being relevant studies should not exclusively focus on circumstantial factors but rather examine a wider range of psychological factors including dispositional and cognitive/behavioural factors that may affect levels of well-being. Inclusion of an overarching theoretical framework in future studies would enable the researchers select the variables of potential relevance and therefore more thoroughly understand the relationship between potential predictors and well-being. It may also be worth testing if the circumstances of migration have a different impact on well-being depending on the immigrants' duration of stay in a foreign country as the Sustainable Happiness Theory (2005) suggests. This may help better understand the relationship between circumstantial factors and well-being.

Implications for Public Health

Findings of this review have important implications for public health. It is envisaged that this review findings will increase public awareness that the best way of improving

immigrants' well-being is by providing social support for immigrants rather than focussing on changes in circumstances (e.g. a better paid job). Strong and significant effects of social support and dispositional factors on well-being highlights the critical role of social support and intrapersonal factors in promoting and sustaining well-being of immigrants.

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