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Cross-national variation in the subjective wellbeing of youth in low and middle income countries: The role of structural and micro-level factors

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Abstract

Subjective wellbeing (i.e. life satisfaction and happiness) impacts youth's social, economic and political participation. Prior studies have documented cross-national variation in subjective wellbeing of adults but there is a lack of data on the prevalence and correlates of subjective wellbeing among youth in low and middle income countries. This paper utilizes data from an international dataset - Multiple Indicator Cluster Surveys to assess the influence of structural and micro-level factors on the subjective wellbeing of youth (ages 15 – 24) in 29 countries or regions in Eastern Europe, Latin America, Asia and Africa. We find that within countries, global life satisfaction and happiness are associated with age, education attainment, place of residence, marital status, household wealth and exposure to mass media. Significant interactions between age, gender and education are observed. However, none of the country level development indicators account for cross-national variation in youth's SWB although there is some indication that income inequities between countries may influence youth's SWB. The findings underscore the need for objective measures of subjective wellbeing to understand the conditions in LMICs.

Keywords

Health; Young adulthood

Introduction

The wellbeing of youth remains a priority area of focus for health and sustainable development. In 2015, there were 1.2 billion youth aged 15 – 24 years, accounting for one out of every six persons in the world (DeSA 2013). Increasing inequities in young people's health (ages 10 – 24) have been widely documented (Elgar et al. 2015; Rathmann et al. 2015; Mackenbach et al. 2008; Richter, Moor, and van Lenthe 2012; Reiss 2013; Cavallo et

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al. 2015). These inequities not only set the stage for future adult health inequities but could also hinder the realization of the sustainable development goals in low and middle-income countries (LMICs). Understanding of the drivers of youth's wellbeing has been limited by the paucity of studies on youth aged 15 – 24; the lack of emphasis on youth in LMICs; and the predominant focus on psychopathology and its associations with negative health outcomes or risky behaviors, which does not allow for careful study of positive outcomes (e.g. happiness, life satisfaction) and their associations with optimal functioning (Csikszentmihalyi and Seligman 2000; Myers 2000). However, developing effective programs and policy options to promote youth health and wellbeing requires understanding the structural and micro-level factors that shape young people's wellbeing across a wide range of countries and across the health continuum. As such, there is a need for studies that include LMICs and highlight the potential impact of positive outcomes on youth functioning and wellbeing.

The field of positive youth development has long recognized the importance of subjective wellbeing (SWB), a tripartite construct that consists of: (1) a cognitive component regarding life satisfaction (LS) that reflects the extent to which individuals find aspects of their lives to be satisfying or fulfilling, and that is more closely related to a person's intrinsic goals and cognitive judgements than to emotions; (2) an affective component regarding happiness, which is associated with short-lived pleasant emotions such as joy and delight (but there remains some controversy on what constitutes happiness, how it should be measured and its determinants); and (3) domain specific satisfactions (e.g. satisfaction with work, family, relationships) (Diener et al. 1999; Ryan and Deci 2001; Gamble and Gärling 2012). SWB is indispensable to the realization of the sustainable development goals due to its impact on youth's potential capabilities with regards to health, education, employment and citizenship (Diener and Seligman 2004; Park 2004). It may also mitigate the deleterious impacts of socio-environmental factors (e.g. negative life events, poor neighborhoods, ineffective parenting styles) on their health and behavior (Suldo and Huebner 2004; McKnight, Huebner, and Suldo 2002; Lewinsohn, Redner, and Seeley 1991). Each component of SWB is distinct but also correlates with other components, thus suggesting a need for the higher order factor of SWB (Diener et al. 1999); but within the broad literature, the components of SWB are often used inter-changeably, and life satisfaction is considered synonymous with happiness. Past studies have identified LS as a preferred indicator when examining the influence of national development indicators on SWB (Vemuri and Costanza 2006; Kroll 2008; Helliwell and Putnam 2004), but the extent to which LS and happiness may operate as conceptually distinct constructs among youth is unknown. In this paper, we make a distinction between LS and happiness; this approach is supported by several prior works (Ryan and Deci 2001; Steger, Kashdan, and Oishi 2008; Deci and Ryan 2008).

The literature on SWB emphasizes the joint importance of structural level factors (e.g. national development indicators) and micro (or individual level) factors in understanding between and within country variations in the SWB of both young people (Cavallo et al. 2015; Elgar et al. 2015; Rathmann et al. 2015; Levin et al. 2011) and adults (Bonini 2008; Helliwell 2003; Helliwell and Huang 2006; Huebner, Drane, and Valois 2000; Kroll 2008; Vemuri and Costanza 2006). National level development indicators are often regarded as objective measures of a country's position in the developmental trajectory (Thornton 2001;

Thornton and Filipov 2007) and resources (i.e. socio-economic resources and opportunities, civil and political rights) available to citizens to fulfill their life goals (Diener, Diener, and Diener 1995), which may also generate social stratifications that influence youth's wellbeing (Elgar et al. 2015).

At the structural level, prior studies have reported significant associations between SWB and indicators of national income or wealth such as *Gross Domestic Product per capita* (GDPpc) (Diener, Diener, and Diener 1995; Diener et al. 1999; Fahey and Smyth 2004; Helliwell 2003; Elgar et al. 2015; Deaton 2008). *Gross National Income* (GNI) (Frey and Stutzer 2002; Kroll 2008; Diener and Oishi 2000; Helliwell 2003; Cabieses, Pickett, and Wilkinson 2016), quality of life e.g. *Human Development Index* (HDI) (Bonini 2008), and income inequity e.g. *GINI* (Viner et al. 2012; Elgar et al. 2015; Rathmann et al. 2015; Cabieses, Pickett, and Wilkinson 2016; Holstein et al. 2009; Levin et al. 2011; Moor et al. 2015; Moor, Rathmann, et al. 2014). However, the findings from these studies tend to vary depending on the research study design, countries (or region) of study, and measurement of SWB: some studies report nil (Easterlin et al. 2010), negative (Deaton 2008), and positive associations (Stevenson and Wolfers 2008).

With regard to how these national level indicators relate to SWB among adolescents and young adults in LMICs, the evidence is limited. First, compared to adults and younger adolescents (aged 11–15), fewer studies have examined the structural determinants of health and wellbeing among youth aged 15 – 24. Second, the majority of studies on SWB among young people have focused on those in high income countries (HICs) (Cabieses, Pickett, and Wilkinson 2016; Elgar et al. 2015; Rathmann et al. 2015; Richter et al. 2012). The evidence that is available, however, suggests that the relationship between these national development indicators (particularly national income and income inequality) and SWB may be different for young people in HICs and LMICs (Holmqvist et al. 2016; Cabieses, Pickett, and Wilkinson 2016). This underscores the need for investigations on the determinants of SWB among youth in LMICs by identifying the contextually relevant structural indicators, as well as and micro-level factors, that contribute to youth's SWB.

At the micro (or individual) level, the SWB among young people has been associated with personality and temperament (Diener 1996; Fogle, Huebner, and Laughlin 2002) and socio-demographic factors such as age (Proctor, Linley, and Maltby 2009; Goldbeck et al. 2007; Deaton 2008; Cavallo et al. 2015; Levin et al. 2011), gender (Richter, Moor, and van Lenthe 2012; Cavallo et al. 2015; Levin et al. 2011), education (Moor et al. 2015; Moor, Rathmann, et al. 2014; Stutzer 2004; Fahey and Smyth 2004; Helliwell 2003), marital status (Diener et al. 1999; Helliwell 2003), and household socio-economic status (Proctor, Linley, and Maltby 2009; Holstein et al. 2009; Moor et al. 2015; Richter et al. 2012; Richter, Moor, and van Lenthe 2012; Levin et al. 2011; Moor, Rathmann, et al. 2014; Rathmann et al. 2015). More specifically, adolescence and early adulthood have been associated with lower SWB (Deaton 2008; Cavallo et al. 2015) due to adolescence-related challenges such as identity development and peer pressure, and the fact that younger adults in most societies have met relatively fewer of their material aspirations compared to older adults (Diener and Eunkook Suh 1997; Umberson, Crosnoe, and Reczek 2010). The relationship between gender and SWB among young people has been mixed (Richter, Moor, and van Lenthe 2012; Cavallo et

al. 2015; Levin et al. 2011). The relationship between educational attainment and SWB is largely positive but it's not clear whether these effects are due to higher income or improvements in social capital as both factors tend to increase with educational attainment (Helliwell 2003). Among adults, married persons consistently report higher levels of SWB than unmarried persons (Diener et al. 1999; Helliwell 2003). Finally, family affluence has been positively associated with young people's SWB due to greater availability of external (e.g. material goods, participation in leisure resources) and internal (e.g. coping resources) resources that may prevent stressors and improve a person's quality of life or their coping efficacy (Pinquart and Sörensen 2000). An important gap in this literature is evidence regarding how these micro-level predictors of SWB work in LMICs.

Drawing on the theory of positive youth development (Benson et al. 2006) and Bronfenbrenner's socio-ecological framework (Bronfenbrenner 1977), this paper focuses on structural and micro level determinants of SWB in LMICs. The goal is to: (1) to examine the extent to which SWB (i.e. global life satisfaction and happiness) among youth differs across LMICs; (2) to examine the extent to which the country level development indicators in predict SWB among youth (ages 15 – 24) in LMICs; and (3) to assess the effect of the individual level factors on SWB between and within across LMICs. To advance the understanding of how the SWB indicators of global LS and happiness may differ with regard to structural and micro predictors, we examine the two separately in this paper. Capitalizing on the availability of data on Roma settlements, this paper also examines how structural and micro-level determinants of SWB may differ in marginalized populations. The term Roma is a generic name that encompasses a variety of ethnic minority population in Europe including the Roma, Sinti and Kale. They are the largest minority population in Europe, totaling between 10 – 12 million citizens. The Roma people, whose ancestry has been traced backed to India (Kovats 2003), have experienced centuries of persecution and discrimination. They remain the most vulnerable, socially excluded and poorest people in Europe, and have comparatively poor health outcomes (Földes and Covaci 2012; Parekh and Rose 2011).

METHODOLOGY

Data

The paper utilizes data drawn from the Multiple Indicator Cluster Surveys conducted between 2010 and 2015. MICS is a household survey conducted in partnerships between UNICEF and governments to assist with monitoring of the health of women and children in countries in low and middle income countries. UNICEF provides training, materials, and support for standard methods of data collection across participating countries; the uniformity in measures, sample size determination, sampling and post-stratification adjustments enables comparability of data across countries. However, the modules included within countries vary, and may also vary by gender and age within some countries. In particular, data on SWB among youth are collected on both males and females in some countries, and on females only in other countries. Additionally, data in a given country may be collected at the national or regional level. Where present, regional data (e.g. Roma settlements) were analyzed independently rather than being merged with national data because these datasets are self-weighting and the majority of these regional data (exception of Kenya) are collected

in ethnic minority settlements where the culture and access to resources may differ in comparison to the given country in general.

A total of 29 countries or administrative regions ($N = 80,990$) were included in the analyses; the majority were located in Eastern Europe (Belarus, Bosnia, Bosnia Roma settlements, Kosovo, Kosovo Roma settlements, Macedonia, Macedonia Roma settlements, Montenegro, Montenegro Roma settlements, Serbia, Serbia Roma settlements and Ukraine) followed by the Caribbean (Barbados, Panama, Jamaica, Dominican Republic), Africa (Kenya Bungoma, Kenya Kakamega and Kenya Turkana regions, Madagascar, Sao Tome and Principe, and Tunisia), and Asia (Nepal, Nepal West, Pakistan Punjab, Mongolia, Mongolia Khuv settlements). Fourteen countries or administrative regions had data on SWB of both males and female respondents, while 15 others had data on females only.

Measures—Table 1 provides a detailed description of the outcome and predictor variables included in these analyses. The outcome variables included two indicators of SWB: (1) *global life satisfaction (henceforth global LS)*, assessed as a mean score of self-reported satisfaction with family life, friendships, school, current job, health, where you live, how people treat you, the way you look, your life overall and current income (2) *Happiness* assessed using one item “Taking all things together, would you say you are” ‘very happy’, ‘rather happy’, ‘not very happy’, or ‘not at all happy’?”. Responses are measured on a four-point scale. For analytic purposes, the predictor variables were categorized into two groups: individual level factors and country level factors. Individual level factors included age, sex, marital status, type of place of residence (i.e. urban or rural), level of education, household income and mass media exposure). Country level factors included four national development indicators: GDP, GNIpc, HDI and GINI coefficient. These data were abstracted from the World Bank database (<http://data.worldbank.org/indicator/>).

Data analysis

All analyses were conducted using IBM SPSS. First, we examined the internal reliability (Cronbach’s alpha) of the global life satisfaction index. The resulting internal reliability ($\alpha = 0.768$) justified the use of a scale as an index measure of global LS. Univariate analyses (i.e. means, standard errors) were conducted to examine the distribution of the outcome and independent variables. Results on the distribution of the outcome variables (i.e. global LS and happiness) are presented in Table 2.

Correlation analyses were conducted to examine the relationship between global LS and happiness; the resulting Pearson correlation coefficient indicated a relatively high correlation ($r = 0.67$, $p < 0.01$), indicating that these two constructs may be tapping into a similar underlying construct. To further assess the extent to which global LS and happiness were similar, we examined the pattern of findings with these two outcomes. Correlation analysis were also conducted to examine the possibility of multi-collinearity among the national development indicators. Results indicated that the GDP per Capita, GNI and HDI were highly correlated ($r > 0.99$), so they could not be used in a same model. However, the correlations between these variables and the GINI coefficient were low ($r < 0.48$). As a result of these analyses, models examining the association between the national level

predictors and global LS and happiness included only one of three measures (i.e. GDP, GNI or HDI) in combination with the GINI coefficient.

Multi-level analyses were conducted to assess the effects of national and individual level predictors on global LS and happiness. First, an unconditional random effects model (without any predictors) was used to ascertain whether global LS and happiness among youth differed across countries. Unique models were fit to assess the independent effects of global LS and happiness. Next, a series of multilevel models with random country level effects were used to examine the extent to which the country level development indicators predicted global LS and happiness among youth. These analyses were followed with multilevel models random intercept models assessing the effects of individual level factors on global LS and happiness. All analyses included sampling weights to account for sampling difference between countries and regions.

RESULTS

National level influences on between country (or region) variation in SWB

The unconditional random effects (without predictors) confirmed that the levels of global LS and happiness among youth differed across the countries, and that there was sufficient variance in global LS and happiness across these countries to justify the multi-level modeling. Specifically, these results indicated that country level characteristics accounted for 10.2% of the variance in global LS and for 7.9% of the variance in happiness (correspondingly, the individual level factors accounted for 89.8% of the variance in global LS and 92.1% of the variance in happiness). In the multi-level analyses examining the effect of the country-level factors on global LS and happiness, none of the country level development indicators was significantly associated with global LS and happiness among youth.

Individual level influences on between country (or region) variation in SWB

Findings from the multi-level models examining the average effects of the individual level factors on global LS and happiness among youth are presented in Table 3. In these analyses, the mean effects of all the individual level factors on LS and happiness were statistically significant, indicating that on average, these factors are significantly associated with the global LS and happiness among youth. The significance of the p-value associated with the residual variance (predictors of within country differences in global LS and happiness) provides additional insight on whether the relationship between each individual level factors with global LS or happiness varies significantly across countries.

Predictors of global LS: As shown in Table 3, global LS was associated with age, gender, education attainment, marital status, type of place of residence, household wealth and mass media exposure. More specifically, global LS was higher among younger youth aged 15 – 19 ($\beta = 0.106$; $p < .001$), male youth ($\beta = 0.054$; $p < .001$), currently married youth, ($\beta = 0.061$; $p < .001$), youth residing in rural areas ($\beta = 0.073$; $p < .001$), and youth reporting higher exposure to mass media ($\beta = 0.022$; $p < .001$). Youth with primary or lower education ($\beta = -0.051$; $p < .001$) or secondary education ($\beta = -0.030$; $p < .001$) had lower

levels of global LS than youth with higher education. A negative relationship was observed between household income and global LS, with increasingly lower levels of global LS among youth in the less wealthy households compared to their counterparts in the wealthiest households: richer households ($\beta = -0.039$; $p < .001$), rich household ($\beta = -0.074$; $p < .001$), poor households ($\beta = -0.108$; $p < .001$) and the poorest household ($\beta = -0.168$; $p < .001$).

Statistically significant the interaction effects were observed between age with gender and age with education. As shown in Figure 1, global LS declined for both male and female youth with cross-sectional age but levels of global LS remained higher among males than females. Similarly, global LS declined for all youth, irrespective of their level of education attainment but the levels of global LS remained higher among youth with higher education compared to youth with primary or lower and secondary education.

Predictors of happiness: As shown in Table 3, happiness was significantly associated with age, gender, education attainment, type of place of residence, current marital status, household income, frequency of exposure. More specifically, happiness was higher among younger youth aged 15 – 19 ($\beta = 0.120$; $p < .001$), currently married youth, ($\beta = 0.204$; $p < .001$), youth residing in rural areas ($\beta = 0.068$; $p < .001$), and youth reporting higher exposure to mass media ($\beta = 0.029$; $p < .001$). However, male youth ($\beta = -0.032$; $p < .001$) and youth with primary ($\beta = -0.089$; $p < .001$) or secondary education ($\beta = -0.061$; $p < .001$) reported lower levels of global LS than youth with higher education. Similar to the findings on global LS, youth residing in less wealthy households reported lower levels of happiness than youth residing in the wealthiest households: poorest household ($\beta = -0.213$; $p < .001$), poor households ($\beta = -0.146$; $p < .001$), rich household ($\beta = -0.108$; $p < .001$) and richer households ($\beta = -0.066$; $p < .001$).

Statistically significant interaction effects were observed between age and gender; age and education; and education and gender. As shown in Figure 2, happiness declined for both male and female youth with age, but with a greater decline in happiness among male than female youth. Similarly, happiness declined for all youth, irrespective of their level of education attainment, with a greater decline among youth with primary (or lower) and secondary education than youth with higher education. Results of the gender and education interaction indicate that among respondents with primary (or lower) education, happiness was higher among male youth than female youth but among respondents with secondary and higher education, happiness was higher among female than male youth.

Supplemental analyses

Country (or region) specific random intercept model models were used to assess the nature of the relationship between the individual level factors on global LS and happiness. Due to missing data on males within some countries or regions, separate analyses for males only and females only, followed by combined models (males and females)- for countries with data on both males and females. Results of these country specific analyses (not presented) were consistent with the combined model analyses (described above). In the models directly comparing global LS and happiness among males and female youth, global LS was higher

among males compared to females while happiness was lower among males compared to females; no other sex-specific patterns were observed.

DISCUSSION

The goal of this paper was to assess the influence of structural and micro-level factors on the SWB of youth (ages 15 – 24) in LMICS. In so doing, this paper makes two important contributions to the literature on SWB among youth in LMICS by addressing the knowledge gap on predictors of happiness among youth in LMICS, and also contributing to the discussion on the conceptual relationships between global LS and happiness. Although prior studies have identified LS as a preferred indicator when examining the influence of national development indicators on SWB (Vemuri and Costanza 2006; Kroll 2008; Helliwell and Putnam 2004), the similar pattern of findings in our analyses suggests that these constructs may not be all that distinct and could be used interchangeably, or combined into a same scale.

Similar to prior studies conducted among adolescents and adults, we found that the levels of global LS and happiness among youth differed significantly across countries (Bonini 2008; Schimmack, Oishi, and Diener 2005; Diener, Diener, and Diener 1995; Moor, Rathmann, et al. 2014; Elgar et al. 2015; Rathmann et al. 2015; Cavallo et al. 2015). However, none of the country level development indicators examined in this paper were significantly associated with global LS and happiness. At the individual level, our findings are also consistent with findings from prior studies conducted among adolescents and adults that have reported on the relationship between global LS and happiness with age (Cavallo et al. 2015; Levin et al. 2011; Deaton 2008), education attainment (Cavallo et al. 2015; Moor, Lampert, et al. 2014), marital status (Diener and Eunkook Suh 1997; Diener et al. 1999; Helliwell 2003; Hutchinson et al. 2004), household wealth (Pinquart and Sörensen 2000; Proctor, Linley, and Maltby 2009; Holstein et al. 2009; Moor et al. 2015; Richter et al. 2012) and place of residence (Prezza and Costantini 1998; Gordon and Caltabiano 1996). Similar to prior studies conducted among adolescents, we also found that male youth reported higher levels of global LS than female youth (Goldbeck et al. 2007; Bisegger et al. 2005; Cavallo et al. 2015). However, the finding that male youth had lower levels of happiness is inconsistent with this literature (Fujita, Diener, and Sandvik 1991; Diener et al. 1999; Proctor, Linley, and Maltby 2009; Huebner, Drane, and Valois 2000; Louis and Zhao 2002), and suggests a need for more studies to examine gender differences in youth's SWB.

The finding that country level development indicators were not significantly associated with global LS and happiness is not unique to our paper (Easterlin et al. 2010; Diener and Biswas-Diener 2002) although other studies have found positive associations (Diener and Suh 2000; Frey and Stutzer 2002; Kroll 2008; Diener and Oishi 2000; Schyns 2002; Bonini 2008; Helliwell and Huang 2006; Karoly and Burtless 1995). The inconsistencies could be attributed to study variations in sampling strategies, sample populations, or the geographic focus. Additionally, these national development indicators do not capture the geographically bound cultural elements that may influence people's evaluations of their SWB. Moreover, SWB is related to the opportunities that are available to a person to meet their human needs (Costanza et al. 2007) but development indicators are aggregate accounts of the economic

resources, opportunities and policies at the country level. As such, they may not adequately capture the individual disparities in access to these resources and entitlements within the youth's immediate social contexts, which may provide a natural reference for evaluating their wellbeing. For example, these national indicators do not capture the experiences of Roma youth who are excluded from the broad social entitlements across Europe (Földes and Covaci 2012; Parekh and Rose 2011). In this case, it could be argued that youth's social comparison to peers would most likely influence their SWB.

The absence of any statistically significant associations between the national development indicators and youth SWB, coupled with the low proportion of variance in SWB explained by these indicators also indicates a need to expand the range of country level factors that potentially capture the perceptions of SWB among youth. National indicators are grounded in the developmental paradigm, which has partly resulted from ethnocentrism of 18th and 19th European scholars who placed their own region (northwest Europe and its overseas diaspora) at the pinnacle of societal development, using data on cross-sectional social and family conditions in non-western countries as proxies of the past in Northwest Europe (Thornton, 2001; Thornton & Filipov, 2007). As such, national indicators such as the HDI which provides numerical development ratings of countries, in a form that remains consistent with the developmental paradigm may national indicators may be not wholly reflective of the conditions in LMICs. Therefore, there is a need to develop more objective measures of wellbeing that are not based on euro-centric standards of social and family conditions. Efforts to develop such complementary measures are still ongoing, with new indices emerging e.g. Human Development Index (HDI), the Human Wellbeing Index (HWI), the Weighted Index of Social Progress (WISP), and the Australian Unity Wellbeing Index (Cummins et al. 2003; Glatzer 2012). Despite this progress, significant work remains in defining values and criteria for these indices, as many still place high emphasis on economic indicators (Glatzer 2012). Moreover, governments and development agencies are still hesitant to use subjective measures as the basis of national indicators of wellbeing (Cummins et al. 2003).

Lastly, this paper also makes a unique contribution on the role of mass media exposure (specifically TV, radio and newsprint) on global LS and happiness among youth. Data on the rates of use of mass media among youth are sparse and often limited to digital media. For example, a recent report on mass media use among youth aged 15 – 24) (IZI, 2017) indicated high levels of mass media exposure. In Sierra Leone - one of the poorest countries in Africa- youth reported high levels of exposure to radio (81.4%) and television (50.6%) but lower levels of exposure to internet (23%) and newsprint (15.2%). Similarly, in Cambodia, daily exposure to television (70%) and radio (54%) was higher than daily exposure to internet (54%). These data suggests that traditional mass media remain the primary sources of information for youth in LMICs. None of the previous studies have examined the impact of mass media on youth SWB despite the reports of high media consumption among youth and its documented impacts on their health (Boynton-Jarrett et al. 2003; Grube and Waiters 2005; Wakefield et al. 2003).

Mass media exposure could influence SWB among youth through several pathways. Media exposure may influence youth's SWB through its social and functional roles. Mass media,

particularly television, has been characterized as “the main agent of consumer socialization”, given its pervasive role in society. An extensive literature has documented the impact of television contents on social perceptions, attitudes, beliefs, mental processes and health outcomes. Bruni and Stanca have shown that television reduces the effect of income on life satisfaction by producing higher material aspirations, enhancing both adaptation and positional effects (Bruni and Stanca 2006). Similarly, we believe that these processes may also the effect of mass media on youth’s SWB. Specifically, mass media, through globalization of information, may provide a reference for people to understand how good or bad their individual or country conditions are, thus providing a standard for evaluating their SWB (Deaton 2008; Schwarz and Strack 1999). Alternatively, increased exposure to mass media may signal greater affluence or more availability of leisure time to engage in social interactions, which may positively influence global LS and happiness through increased social capital and social trust as well as increased access to social support (Pinquart and Sörensen 2000; Schmitt-Beck and Wolsing 2010). These findings highlight potential leverage points that could be utilized in promoting youth’s SWB. However, there is a still a need for more studies to understanding the mechanisms underlying the association between mass media and SWB.

Taken together, these findings have several research, programmatic and policy implications for youth wellbeing. In terms of research, these findings highlight the need to develop empirically driven country level indicators to supplement the currently existing national development indicators, which are grounded in socially driven constructions of what constitutes development or modernity. They underscore the need for more studies, particularly longitudinal studies, in low and middle income countries that will provide data to enrich our understanding of the trends and determinants of SWB across the life course. The findings on household wealth underscore the relevance of social economic status as a social determinant that has been associated with a range of poor health outcomes, including increased risk for poor mental health, substance use and mortality. As such, these findings underscore the need for interventions, both programmatic and policy to re-dress the expanding inequities between the rich and poor by instituting social protections to ensure access to basic resources and opportunities for the poor.

Conclusions

This paper, which is grounded in the theory of positive youth development, has attempted to illustrate the structural and micro-level factors that explain the difference in the SWB of youth within and across nations using an international dataset. An important aspect of the current research in positive developmental science is expanding the conceptualization of developmental success beyond individual wellbeing, to understand the factors that promote the social good. In response to calls for strategic national and community investments to strengthen the developmental landscape broadly, this paper highlights the strengths and limitations of indicators typically used to inform national policy and programing. The comparability in study design and data collection methods allows for examination of cross-national variation in SWB across countries. However, this paper is not without limitations: (1) we utilize the cross-sectional data to establish associations which may not imply causal relationships; (2) the paper relies of self-reported data which are vulnerable to measurement

bias due to differences in cognition and language may have impacted participants' responses: of particular concern is the lack of understanding of the reference points they use in evaluating their SWB; (3) our analyses do not examine all the potential factors (e.g. biological factors, environmental indicators) that could influence youth's SWB; and (4) the variation in the depth of data collected across countries limits direct comparisons since a number of countries had missing data on several key indicators and this could influence the nature of the relationships observed in this paper (however, the advantages of examining LMIC in this data set outweighs these comparability limitations). Therefore, our findings should be interpreted within the limitations of the survey. For more conclusive results on these relationships, there is a need for longitudinal studies with internationally representative samples of youth. Nonetheless, these analyses make several unique contributions to the literature on SWB among youth in LMICs including the predictors of happiness among youth, the role of mass media on youth SWB, and the conceptual relationship between global LS and happiness among youth. These findings provide useful insights on youth global LS and happiness, both useful psychological constructs that have varied with implications for physical, mental and social wellbeing.

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Gender * Age group

Education * Age group

Figure 1.
Graphs of statistically significant interactions with life satisfaction

Gender * Age group

Education * Age group

Gender * Education

Figure 2.
Graphs of statistically significant interactions with happiness

Table 1:

Overview of variables included in the analysis

Variable	Description	Values / Measures	Countries with missing data
Outcome variables			
Life satisfaction	Mean life satisfaction index measured on a 5-point Likert scale	Mean value of satisfaction with family life, friendships, school, current job, health, where you live, how people treat you, the way you look, your life overall and current income	-
Happiness	Overall happiness level measured on a 5-point Likert scale	1 – very unhappy, 2 – somewhat unhappy, 3 – neither happy, nor unhappy, 4 – somewhat happy, 5 – very happy	-
Individual level factors			
Gender	Sex of respondent	0 – male, 1 – female	Barbados, Jamaica, Lebanon, Macedonia Roma, Macedonia, Madagascar, Nepal West, Nepal, Panama, Tunisia, Dominican Republic, Kenya Bungoma, Kenya Kakamega, Kenya Turkana, Pakistan Punjab have only female data
Age	In years		-
Education	Education of the respondent	0 – preschool, 1 – primary, 2 – secondary, 3 – higher	Nepal
Marital Status	Marital status of the respondent	0 – formerly married/in union, 1 – currently married/in union, 2 – never married/in union	-
Household income	Household income quintile	1 – Poorest, 2 – Second, 3 – Middle, 4 – Fourth, 5 – Richest	-
Residence	Type of residence	0 – rural, 1 – urban	-
Exposure to Mass media	Mean exposure to mass media	Measured as mean frequency of: reading newspaper or magazine, listening to the radio, watching TV and Internet usage in the past month	Nepal, Jamaica, Macedonia, Montenegro
Country level factors			
GDP	Gross Domestic Product per capita		-
GNI	Gross National Income		-
HDI	Human Development Index		Kosovo
GINI	GINI coefficient of inequality		Barbados, Kosovo, Lebanon,

Table 2.

Variation in life satisfaction (GLS), happiness GDP per capita, GNI, HDI, GINI indexed by region and country^a

	N	Mean Life satisfaction (SE)	Mean Happiness (SE)	GDP	GNI	HDI	GINI
<i>Eastern Europe</i>							
Montenegro	1 705	4.57 (0.01)	4.7 (0.01)	7 147	7 288	.801	30.63
Macedonia	1 071	4.55 (0.01)	4.51 (0.02)	5 080	4 985	.742	44.2
Kosovo	2 671	4.54 (0.01)	4.49 (0.02)	3 985	4 265	-	-
Serbia	2 341	4.48 (0.01)	4.47 (0.01)	6 423	6 161	.761	29.65
Macedonia Roma	363	4.4 (0.03)	4.31 (0.05)	5 080	4 985	.742	44.2
Belarus	1 702	4.37 (0.01)	4.36 (0.02)	6 703	6 548	.796	26.46
Kosovo Roma	817	4.34 (0.02)	4.27 (0.04)	3 985	4 265	-	-
Serbia Roma	1 371	4.3 (0.02)	4.38 (0.02)	6 423	6 161	.761	29.65
Moldova	2 301	4.28 (0.01)	4.23 (0.02)	1 788	1 994	.683	30.63
Montenegro Roma	699	4.27 (0.02)	4.41 (0.03)	7 147	7 288	.801	30.63
Ukraine	2 614	4.21 (0.01)	4.11 (0.01)	4 029	3 985	.743	24.82
Bosnia	2 747	4.11 (0.01)	4.13 (0.01)	4 495	4 456	.724	33.04
Bosnia Roma	1 096	3.92 (0.02)	3.98 (0.02)	4 495	4 456	.724	33.04
<i>Latin America</i>							
Panama	3 016	4.63 (0.01)	4.61 (0.01)	11 787	11 714	.777	51.9
Dominican Republic	10 550	4.48 (0.00)	4.49 (0.01)	5 952	5 865	.715	45.68
Barbados	382	4.34 (0.03)	4.42 (0.04)	15 385	14 604	.793	-
Jamaica	1 626	4.44 (0.01)	4.36 (0.02)	5 242	5 054	.727	45.51
<i>Sub-Saharan Africa</i>							
Kenya Turkana	461	4.53 (0.02)	4.54 (0.04)	1 257	1 353	.539	47.68
Kenya Bungoma	487	4.56 (0.03)	4.53 (0.04)	1 257	1 353	.539	47.68
Sao Tome	2 135	4.21 (0.01)	4.25 (0.02)	1 676	1 803	.555	33.87
Kenya Kakamega	381	4.31 (0.03)	4.22 (0.05)	1 257	1 353	.539	47.68
Madagascar	1 300	4.06 (0.02)	3.78 (0.04)	445	432	.507	40.63
<i>Asia</i>							
Pakistan Punjab	21 119	4.27 (0.00)	4.43 (0.01)	1 221	1 431	.538	29.63
Mongolia Khuv	967	4.24 (0.02)	4.18 (0.02)	3 773	3 467	.706	36.52
Mongolia	3 776	4.17 (0.01)	4.12 (0.01)	3 773	3 467	.706	36.52
Nepal	5 123	4.05 (0.01)	4.10 (0.01)	655	703	.548	32.82
Nepal West	2 898	4.13 (0.01)	3.74 (0.01)	655	703	.548	32.82
<i>Middle East</i>							
Lebanon	2 039	4.3 (0.01)	4.18 (0.02)	8 728	8 937	.761	-
Tunisia	3 232	4.11 (0.01)	3.94 (0.02)	4 141	3 966	.715	35.79

^aThe countries and regions are grouped by World Health Organization regions, and ordered by GINI coefficient within the sub-regions.

Table 3.

Results of multi-level analyses assessing the influence of individual level (socio-demographic) predictors on within country variation in global life satisfaction and happiness

	Global life satisfaction			Happiness		
	Mean effects	P-value for residual variance	Mean effects with interactions	Mean effects	P-value for residual variance	Mean effects with interactions
Intercept	4.147 ***	.015	4.147 ***	4.105 ***	.526	4.105 ***
Male ^a	0.054 ***	.112	0.054 ***	−0.032 **	.060	−0.032 **
15–19 years ^b	0.106 ***	.006	0.106 ***	0.120 ***	.011	0.120 ***
Primary education ^c	−0.051 ***	.002	−0.051 ***	−0.089 ***	.020	−0.089 ***
Secondary education ^c	−0.030 ***		−0.030 ***	−0.061 ***		−0.061 ***
Currently married ^d	0.061 ***	.009	0.061 ***	0.204 ***	.005	0.204 ***
Rural residence ^e	0.073 ***	.010	0.073 ***	0.068 ***	.293	0.068 ***
HH income: poorest ^f	−0.168 ***	.000	−0.168 ***	−0.213 ***	.000	−0.213 ***
HH income: poor ^f	−0.108 ***		−0.108 ***	−0.146 ***		−0.146 ***
HH income: rich ^f	−0.074 ***		−0.074 ***	−0.108 ***		−0.108 ***
HH income: richer ^f	−0.039 ***		−0.039 ***	−0.066 ***		−0.066 ***
Mass media exposure	0.022 ***	.009	0.022 ***	0.029 ***	.085	0.029 ***
Male [*] 15–19 years			0.027 **			0.049 **
Male [*] Primary school			0.014			0.078 *
Male [*] Secondary school			0.002			0.027
Primary [*] 15–19 years			0.024			0.106 ***
Secondary [*] 15–19 years			0.057 ***			0.102 ***

* p < 0.05,

** p < 0.01,

*** p < 0.001

^aReference group is females;

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- g Reference group is 20 – 24 years;
- c Reference group is higher education;
- d Reference group is unmarried;
- e Reference group is urban residence;
- f Reference group is richest.