social sciences

MDPI

Article

Subjective Happiness, Health and Quality of Life and Their Sociocultural Correlates among Younger Population in Malawi

Sanni Yaya [1,*,†], Sharmistha Ghosh [2] and Bishwajit Ghose [1,*,†]

[1] Faculty of Social Sciences, School of International Development and Global Studies, University of Ottawa, Ottawa, ON K1N 6N5, Canada
[2] Department of Sociology, University of Dhaka, Dhaka 1000, Bangladesh; aimidu.hust@yahoo.com
* Correspondence: sanni.yaya@uottawa.ca (S.Y.); brammaputram@gmail.com (B.G.); Tel.: +1-613-562-5800 (S.Y.); +1-613-262-4852 (B.G.)
† These authors contributed equally to this work.

Received: 8 December 2018; Accepted: 12 February 2019; Published: 15 February 2019

Abstract: Public health research and policy in sub-Saharan Africa are generally disease-oriented, with the focus being largely confined within the biological determinants of health. So far, little attention has been given to developing a more health-oriented approach by emphasising the psychosocial dimensions of health, especially among the younger population. To this regard, we conducted the present study to assess the prevalence and sociocultural correlates of perceived happiness, health, and life satisfaction among the adolescent and young (15–24 years) population in Malawi. We analysed cross-sectional data on 12,610 men and women based on a Malawi multiple indicator cluster survey conducted in 2013–2014. Data were analysed using descriptive and multivariable regression methods. According to the findings, more than 80% of the men and women reported being satisfied about happiness, health, and life. Multivariate analysis showed an inverse relationship between being currently or formerly married and perceived happiness. Ethnic disparities in perceived health and happiness were more pronounced in men, whereas that of life satisfaction was more pronounced in women. Living in households of the highest wealth quintile was positively associated with health and life satisfaction, but not with happiness. These findings highlight the need for prioritising the psychosocial needs of the adolescent and youth populations in designing health and social policy in Malawi. The findings need to be interpreted in light of the factors specific to the sociocultural environment in Malawi.

Keywords: perceived happiness; health; life satisfaction; younger population; Malawi

1. Introduction

The concepts of the social determinants of health (SDH) and life outcomes have been gaining widespread attention in various disciplines, including sociology, environment, public health, and international development (Ngamaba and Soni 2018; Amit et al. 2012; Becker et al. 2009; Benjamin et al. 2012; Mail Online 2010). Led by the growing understanding of the nonbiological determinants of health, researchers and clinicians are placing higher emphasis on the factors embedded within the environment in which individuals live and function (Braveman and Gottlieb 2014). The importance of socioeconomic, environmental, and cultural factors on health outcomes are better understood in terms of their role in providing the necessary conditions required for maintaining a healthy lifestyle, avoiding risk factors, and being able to seek proper care when facing health issues (Zarini et al. 2014; Bishwajit et al. 2017; Gate et al. 2016). These factors are broadly classified to encompass the social, cultural, behavioural, and environmental aspects of health, quality of

life, and well-being, especially among the adult population. However, unlike clinical diagnosis, the psychosocial aspects of health are rather subjective and not possible to capture by objective measurement (Bishwajit et al. 2017). This difficulty was greatly dealt with by the development of the single-item question by the World Health Organization (WHO). Self-rated health (SRH) is now a widely used measure to capture the overall sociocultural condition of individual health and has been found to be a strong predictor of health condition and mortality among individuals living with and without disability and chronic conditions, such as cardiovascular diseases and functional ability (Zarini et al. 2014; Idler and Kasl 1995; Idler and Benyamini 1997; DeSalvo et al. 2006).

Apart from that, SRH is also strongly associated with quality of life (QoL), which is a measure of general well-being that reflects an individual's satisfaction with health, education, employment, living and social environment, relationships, and safety (Zarini et al. 2014; Idler and Kasl 1995; Idler and Benyamini 1997; DeSalvo et al. 2006; Hays et al. 2015; Balogun et al. 2017). Over the course of the last few decades, both SRH and QoL have been growing in popularity, especially among public health researchers in high-income countries. However, the two constructs have remained largely underappreciated in the low-middle-income settings. The relatively higher disease burden, shorter life expectancy, and lower living standards in developing countries can be interpreted in terms of sociocultural and environmental determinants, such as age structure, gender disparities, low literacy rates, living environment, occupation and economic freedom, and the values and norms that guide peoples' beliefs and behaviour (Agorastos et al. 2014; Galavotti and Schnell 1994; Tsai et al. 2017; Development Impact Guest Blogger 2016; Decker and Constantine 2011; Gooneratne and Vitiello 2014). For instance, individuals with a higher socioeconomic status are more likely to be able to afford better housing, lead a healthy lifestyle, and enjoy higher quality of health and life compared to those in the lower socioeconomic strata (Zarini et al. 2014; Bishwajit et al. 2017; Amo-Adjei and Kumi-Kyereme 2015). So far, only one longitudinal study conducted in a rural setting in Malawi from the perspective of subjective well-being found that higher income was associated with better general health status and subjective well-being of the participants (Chin 2010).

The underlying sociocultural disparities in health, diseases, and quality of life are well-documented in many high-income countries. By contrast, health research and care delivery in developing countries have been concerned mainly with clinical outcomes, with little attention on the psychosocial aspects of health, such as life satisfaction and perceived sense of happiness. There are certain countries, such as Bhutan (Sithey et al. 2015) and Costa Rica (Rosero-Bixby and Dow 2016), where public policy is oriented towards developing social capital and promoting general happiness. However, research evidence on these constructs from African countries is still scarce. To this end, we carried out the present study on Malawi, one of the least developed of all African countries (Yaya et al. 2016), to investigate the situation of perceived health, life satisfaction, and happiness. Our secondary objective was to measure whether these three constructs vary across gender, demographic, and sociocultural factors. Due to lack of first-hand data, we relied on secondary extracted data from the most recent multiple indicator cluster survey conducted in Malawi (MICS 2013–2014), which included a special section on subjective well-being among men and women aged between 15 and 24 years. As a poverty- and internal conflict-ridden country, Malawi is facing significantly challenges to invest on human development programmes and improving people's quality of life.

2. Methods

Data Source

Data for this study were sourced from the fifth round of the Malawi multiple indicator cluster survey conducted in 2013–2014 (MICS 5). Field work for the survey was started in November 2013 and lasted until April 2014. The MICS programme operates in about 108 countries and over 280 surveys have been carried out since its inception in 1995. While known as being the most comprehensive and reliable source of data on maternal and child health issues in developing countries, in recent years,

the surveys have been collecting data on issues such as living conditions and perceived and quality of life among men and women aged between 15–24 years.

Sampling technique: As indicated by the name, MICS surveys employ multistage sampling techniques that involve systematic selection of primary sampling unites (PSUs) and then selections of certain number of households from the PSUs. Participants are approached in their households and interviewed face-to-face by trained surveyors. In 2013–2014 MICS, 24,230 women aged between 15 and 49 years were interviewed in total, with a response rate of 95.3%. However, data on the outcome variables used in this study were collected among participants aged up to 24 years only; therefore, the rest were not included in the analysis. Detailed methods of the survey, such as questionnaire building and field work, were published elsewhere (Yaya et al. 2016).

3. Measures

3.1. Outcome Variables

The dependent variables included in this study were subjective: (1) Estimation of happiness, (2) satisfaction with health, and (3) life satisfaction. These were assessed based on the following questions:

- Estimation of overall happiness: Respondents were asked 'Taking all things together, would you say you are (1) very happy, (2) somewhat happy, (3) neither happy nor unhappy, (4) somewhat unhappy (5) very unhappy?'
- Satisfaction with health: It was measured by the following question: 'How satisfied are you with your health?' The possible answers were: (1) Very satisfied, (2) Somewhat satisfied, (3) Neither satisfied nor unsatisfied, (4) Somewhat unsatisfied, (5) Very unsatisfied.
- Satisfaction with life overall: It was measured by the following question: 'How satisfied are you with your life, overall?' with answers ranging from very satisfied to very unsatisfied the same way as the question on satisfaction with health.

Answering the questions on estimation of happiness and life satisfaction was facilitated by displaying a card to the respondents with smiling faces corresponding to the degree of response categories: 'very satisfied', 'somewhat satisfied', 'neither satisfied nor unsatisfied', 'somewhat unsatisfied', and 'very unsatisfied'. For happiness estimation, similar questions have been used in previous surveys, e.g., the World Values Survey, Euro-Barometer Survey, and U.S. General Social Survey (Benjamin et al. 2012):

- *All things considered, how satisfied are you with your life as a whole these days?*
- *Taken all together, how would you say things are these days—would you say that you are very happy, pretty happy, or not too happy?*

Similar approaches have been used for assessing life satisfaction as well (Cheung and Lucas 2014):

- *All things considered, how satisfied are you with your life as a whole these days?*
- *In general, how satisfied are you with your life?*
- *Overall, how satisfied are you with your life nowadays?*

Empirical studies have shown that these single-item life satisfaction questions perform very similarly compared with the Satisfaction with Life Scale (SWLS), as they produce virtually identical answers to substantive questions regardless of the measure used (Cheung and Lucas 2014).

Regarding health status, the personal rating of general health during the survey or the recent time is more commonly used in the public health literature (Hirve 2014; Hays et al. 2015):

- *In general, how would you rate your health, today?*
- *In general, how would you rate your physical health?*

For this study, all three dependent variables were dichotomised in the following way: (1) Satisfied—*Very satisfied, somewhat satisfied*, and (2) Not satisfied—*Neither satisfied nor unsatisfied, somewhat unsatisfied, Very unsatisfied* (Abdulrahim and Asmar 2012; He et al. 2018). Happiness was categorised as: Happy—*Very happy, somewhat happy*, and Not happy—*neither happy nor unhappy, somewhat unhappy, very unhappy*.

3.2. Predictor Variables

Selection of explanatory variables was guided by a thorough literature review on subjective well-being in PubMed. The review suggested the involvement of factors across several domains of health and wellbeing: Demographic (e.g., age, sex), sociocultural (e.g., religion, ethnicity), financial (e.g., income sufficiency), behavioural (e.g., dietary factors, smoking, drinking), and relational (e.g., living arrangement, quality of marriage). For this study, it was not possible to include variables from all these domains, as subjective well-being was not the main focus of the survey. Based on the availability of the variables on the dataset, the following were included in the analysis: Age (15–19, 20–24); sex (Male/Female); marital status (Currently Married/Formerly Married/Never Married); region (Northern/Central/Southern); satisfaction with living condition (Not satisfied/Satisfied); religion (Islam and other/Christian); wealth quintile ((Poorest or Q1)/Second or Q2/Middle or Q3/Fourth or Q4/Richest or Q5)); ethnicity (Chewa/Tumbuka/Lomwe/Yao/Ngoni/Other); education (None/Primary/Secondary); has children (Yes/No); ever smoke (Yes/No); ever drink (Yes/No); media use (Yes/No) (Ngamaba and Soni 2018; Bishwajit et al. 2017; DeSalvo et al. 2006; Balogun et al. 2017; Chin 2010; Cheung and Lucas 2014; He et al. 2018; Son et al. 2016; Ghose 2017).

Satisfaction with living condition was dichotomised in the following way: Not satisfied (Dissatisfied/Very dissatisfied/Neutral) and Satisfied (Very satisfied/satisfied). As there was no direct information on income, we used a household wealth index, which is a composite indicator of household wealth status. The index is constructed by principal components analysis of scores assigned on individual household possessions, e.g., consumer goods, dwelling characteristics. Households are then ranked based on individual scores to range between poorest, poorer, middle, richer, and richest (Son et al. 2016). Media use was measured by self-reported use of TV and radio.

3.3. Data Analysis

Data analyses were performed using Stata 14. The main inclusion criterion for this study was availability of information on the outcome variables (subjective health, happiness, and quality of life). Datasets were first checked for missing values and outliers. Survey weight provided on the dataset was used before conducting the analyses to ensure data are representative of the entire population. Background information about the participants is presented using descriptive statistics. The five categories of happiness, health, and life satisfaction were merged into two groups before analysis. Percentages of perceived happiness, health, and life satisfaction were presented along with 95% CI for all the predictor variables. Ungrouped proportions of perceived happiness, health, and life satisfaction were also calculated and presented as bar charts. These analyses were stratified by age and sex to provide a better understanding of the demographic patterns in the distribution of the outcome variables. Chi-square bivariate tests were used to assess the statistical significance between the three outcomes with the predictor variables. Variables that showed association at 0.25 at bivariate level were retained for multivariable analysis (Ghose 2017).

The relationship between the three outcome and explanatory variables were measured by multivariable regression methods. Given the dichotomous nature of the outcome variables, a binary logistic regression model was used to generate the odds ratios and their 95% confidence intervals. The variance inflation factor (VIF) was used as a measure of collinearity to ensure that none of the predictor variables in the final model was highly associated with each other. All statistical tests were two tailed and p values below 0.05 were considered statistically significant (Except for the cross-tabs).

4. Ethical Approval

All participants gave informed consent prior to taking part in the interviews. Data were open-access and available online in anonymised form; therefore, no additional approval was necessary.

5. Results

5.1. Descriptive Results

The survey population comprised 12,610 men and women aged between 15 and 24 years. The majority of the participants were female (77.4%) and aged below 20 years (54.8%). The basic sociodemographic characteristics are presented in Table 1.

Table 1 also shows that percentages of being positive/satisfied with happiness, health, and life were higher among those aged 15 to 19 years, female, who never married, who attended school, and who had children. Those who expressed satisfaction with life were also more likely to be rural residents, never married, residents of the Southern region, satisfied with living condition, followers of Christianity, have a higher wealth status (except for health), of Chewa ethnicity, with higher education (primary and secondary), no children, have never smoked tobacco, never drunk alcohol, and be non-users of electronic media.

Table 1. Sample characteristics. n = 12,610.

	n (%)	Happiness Estimation		Satisfied with Health		Satisfied with Life	
		Not Happy	Happy	Not Satisfied	Satisfied	Not Satisfied	Satisfied
Age							
15–19	6911 (54.8)	52.2 (50.2, 54.2)	54.5 (53.6, 55.4)	50.6 (48.8, 52.5)	54.7 (53.7, 55.6)	52.7 (50.6, 54.7)	54.5 (53.6, 55.4)
20–24	5699 (45.2)	47.8 (45.8, 49.8)	45.5 (44.6, 46.4)	49.4 (47.5, 51.2)	45.3 (44.4, 46.3)	47.3 (45.3, 49.4)	45.5 (44.6, 46.4)
***p*-value**		0.080		0.025		0.063	
Sex							
Male	2853 (22.6)	26.1 (24.0, 28.2)	22.1 (21.2, 23.1)	21.4 (19.9, 22.9)	22.7 (21.7, 23.7)	15.4 (13.6, 17.5)	22.8 (22.0, 23.7)
Female	9757 (77.4)	73.9 (71.8, 76.0)	77.9 (76.9, 78.8)	78.6 (77.1, 80.1)	77.3 (76.3, 78.3)	84.6 (82.5, 86.4)	77.2 (76.3, 78.0)
***p*-value**		<0.001		0.160		<0.001	
Marital status							
Currently Married	4902 (38.9)	35.7 (33.4, 38.1)	40.1 (39.1, 41.2)	44.0 (42.0, 45.9)	39.1 (38.1, 40.1)	40.0 (37.7, 42.3)	39.8 (38.9, 40.8)
Formerly Married	760 (6.0)	6.9 (5.9, 7.9)	5.6 (5.3, 6.0)	8.4 (7.5, 9.3)	5.5 (5.2, 5.8)	5.8 (5.0, 6.8)	5.8 (5.5, 6.2)
Never Married	6948 (55.1)	57.4 (54.8, 59.9)	54.2 (53.2, 55.3)	47.7 (45.7, 49.7)	55.4 (54.4, 56.5)	54.2 (51.8, 56.6)	54.3 (53.3, 55.3)
***p*-value**		<0.001		<0.001		0.287	
Region							
Northern	2247 (17.8)	13.7 (11.9, 15.8)	11.3 (10.0, 12.8)	17.2 (14.0, 21.0)	10.9 (9.7, 12.2)	9.5 (7.8, 11.7)	12.0 (10.7, 13.5)
Central	4300 (34.1)	40.8 (37.7, 44.0)	40.2 (38.1, 42.4)	41.4 (38.8, 44.0)	40.1 (38.0, 42.3)	42.5 (37.7, 47.5)	40.4 (38.5, 42.2)
Southern	6063 (48.1)	45.5 (42.4, 48.5)	48.5 (46.4, 50.6)	41.4 (38.9, 44.0)	49.0 (46.9, 51.1)	47.9 (43.5, 52.3)	47.7 (45.7, 49.6)
***p*-value**		0.056		<0.001		0.052	
Living condition							
Not satisfied	9645 (76.5)	76.3 (74.4, 78.1)	77.2 (76.4, 77.9)	78.8 (77.4, 80.2)	76.9 (76.1, 77.6)	77.1 (75.3, 78.9)	76.9 (76.2, 77.6)
Satisfied	2965 (23.5)	23.7 (21.9, 25.6)	22.8 (22.1, 23.6)	21.2 (19.8, 22.6)	23.1 (22.4, 23.9)	22.9 (21.1, 24.7)	23.1 (22.4, 23.8)
***p*-value**		0.064		0.143		0.350	
Religion							
Islam/other	4364 (34.6)	37.8 (35.3, 40.4)	37.6 (36.5, 38.7)	39.5 (37.1, 41.9)	37.4 (36.3, 38.5)	37.2 (34.5, 39.9)	37.6 (36.6, 38.7)
Christian	8246 (65.4)	62.2 (59.6, 64.7)	62.4 (61.3, 63.5)	60.5 (58.1, 62.9)	62.6 (61.5, 63.7)	62.8 (60.1, 65.5)	62.4 (61.3, 63.4)
***p*-value**		0.220		0.297		0.290	
Wealth quintile							
Poorest (Q1)	2337 (18.5)	18.0 (16.6, 19.4)	19.2 (18.7, 19.8)	33.2 (31.1, 35.4)	31.4 (29.6, 33.2)	17.7 (16.4, 19.1)	19.5 (18.9, 20.1)
Q2	2408 (19.1)	20.0 (18.6, 21.6)	18.8 (18.2, 19.4)	12.2 (9.7, 15.2)	8.9 (7.9, 10.1)	20.6 (18.8, 22.5)	18.9 (18.2, 19.5)
Q3	2484 (19.7)	18.7 (16.8, 20.8)	18.9 (18.3, 19.5)	15.7 (14.1, 17.3)	19.0 (17.8, 20.2)	16.5 (14.9, 18.3)	19.4 (18.8, 20.0)
Q4	2511 (19.9)	16.4 (14.9, 17.9)	19.0 (18.2, 19.9)	15.5 (14.0, 17.0)	15.6 (14.6, 16.6)	18.6 (16.7, 20.7)	18.7 (18.0, 19.5)
Richest (Q5)	2870 (22.8)	26.9 (23.4, 30.8)	24.1 (22.7, 25.5)	10.4 (9.1, 11.7)	11.4 (10.5, 12.3)	26.5 (22.8, 30.7)	23.5 (22.2, 24.9)
***p*-value**		0.545		<0.001		0.168	

Table 1. *Cont.*

	n (%)	Happiness Estimation		Satisfied with Health		Satisfied with Life	
		Not Happy	Happy	Not Satisfied	Satisfied	Not Satisfied	Satisfied
Ethnicity							
Chewa	3603 (28.6)	31.2 (28.6, 33.9)	31.6 (29.9, 33.4)	33.2 (31.1, 35.4)	31.4 (29.6, 33.2)	34.4 (29.8, 39.4)	31.4 (29.9, 32.9)
Tumbuka	1312 (10.4)	11.4 (9.5, 13.6)	9.0 (7.9, 10.2)	12.2 (9.7, 15.2)	8.9 (7.9, 10.1)	8.9 (7.0, 11.1)	9.4 (8.3, 10.5)
Lomwe	2180 (17.3)	16.0 (14.2, 18.1)	18.9 (17.8, 20.2)	15.7 (14.1, 17.3)	19.0 (17.8, 20.2)	17.4 (15.4, 19.7)	18.7 (17.7, 19.8)
Yao	1584 (12.6)	17.1 (15.1, 19.3)	15.4 (14.3, 16.5)	15.5 (14.0, 17.0)	15.6 (14.6, 16.6)	17.1 (15.1, 19.3)	15.3 (14.4, 16.3)
Ngoni	1623 (12.9)	10.7 (9.1, 12.5)	11.3 (10.4, 12.3)	10.4 (9.1, 11.7)	11.4 (10.5, 12.3)	9.7 (7.7, 12.1)	11.4 (10.7, 12.2)
Other	2308 (18.3)	13.6 (12.1, 15.2)	13.7 (12.9, 14.6)	13.1 (12.0, 14.3)	13.8 (13.0, 14.6)	12.5 (11.1, 14.2)	13.8 (13.0, 14.6)
***p*-value**		0.187		<0.001		<0.001	
Education							
None	391 (3.1)	2.6 (2.1, 3.3)	3.8 (3.5, 4.0)	4.4 (3.6, 5.3)	3.5 (3.3, 3.8)	3.7 (3.1, 4.5)	3.6 (3.4, 3.9)
Primary	8329 (66.1)	57.9 (54.5, 61.2)	67.0 (66.0, 68.0)	71.2 (69.1, 73.2)	64.3, 66.4)	64.1 (60.2, 67.8)	66.8 (65.8, 67.8)
Secondary	3690 (29.3)	39.5 (36.2, 42.9)	29.2 (28.3, 30.2)	23.4 (21.4, 25.6)	29.0 (28.0, 30.0)	32.2 (28.7, 35.9)	29.6 (28.6, 30.5)
***p*-value**		<0.001		<0.001		0.509	
Has children							
Yes	5299 (42.0)	40.3 (37.9, 42.8)	42.7 (41.8, 43.7)	50.8 (48.9, 52.7)	41.4 (40.5, 42.4)	42.9 (40.9, 44.9)	42.7 (41.8, 43.6)
No	7311 (58.0)	59.7 (57.2, 62.1)	57.3 (56.3, 58.2)	49.2 (47.3, 51.1)	58.6 (57.6, 59.5)	57.1 (55.1, 59.1)	57.3 (56.4, 58.2)
***p*-value**		0.068		<0.001		0.136	
Ever smoke							
Yes	366 (2.9)	3.7 (2.8, 5.0)	3.1 (2.8, 3.5)	2.7 (2.1, 3.4)	3.2 (2.9, 3.6)	2.6 (1.8, 3.8)	3.0 (2.7, 3.4)
No	1223 (97.1)	96.3 (95.0, 97.2)	96.9 (96.5, 97.2)	97.3 (96.6, 97.9)	96.8 (96.4, 97.1)	97.4 (96.2, 98.2)	97.0 (96.6, 97.3)
***p*-value**		0.006		0.252		0.323	
Ever drink							
Yes	1232 (9.9)	14.0 (12.1, 16.2)	10.1 (9.4, 10.9)	8.9 (7.7, 10.2)	10.7 (10.0, 11.6)	8.5 (7.0, 10.3)	10.3 (9.6, 11.0)
No	11(361(90.1)	86.0 (83.8, 87.9)	89.9 (89.1, 90.6)	91.1 (89.8, 92.3)	89.3 (88.4, 90.0)	91.5 (89.7, 93.0)	89.7 (89.0, 90.4)
***p*-value**		<0.001		0.053		0.072	
Media use							
Yes	1850 (14.7)	11.9 (10.6, 13.3)	15.7 (15.1, 16.3)	17.5 (16.2, 18.8)	15.0 (14.4, 15.7)	16.2 (14.6, 18.0)	15.3 (14.7, 15.9)
No	10,760 (85.3)	88.1 (86.7, 89.4)	84.3 (83.7, 84.9)	82.5 (81.2, 83.8)	85.0 (84.3, 85.6)	83.8 (82.0, 85.4)	84.7 (84.1, 85.3)
***p*-value**		0.051		<0.001		0.378	

Figures represent percentages (95% CIs). Living condition refers to satisfaction with living condition.

5.2. Prevalence of Satisfaction with Happiness, Health and Life

Figure 1 illustrates the overall proportion of satisfaction with happiness, health, and life. Nearly 70% of the participants expressed high satisfaction (very satisfied), with less than 5% reporting dissatisfaction about all three.

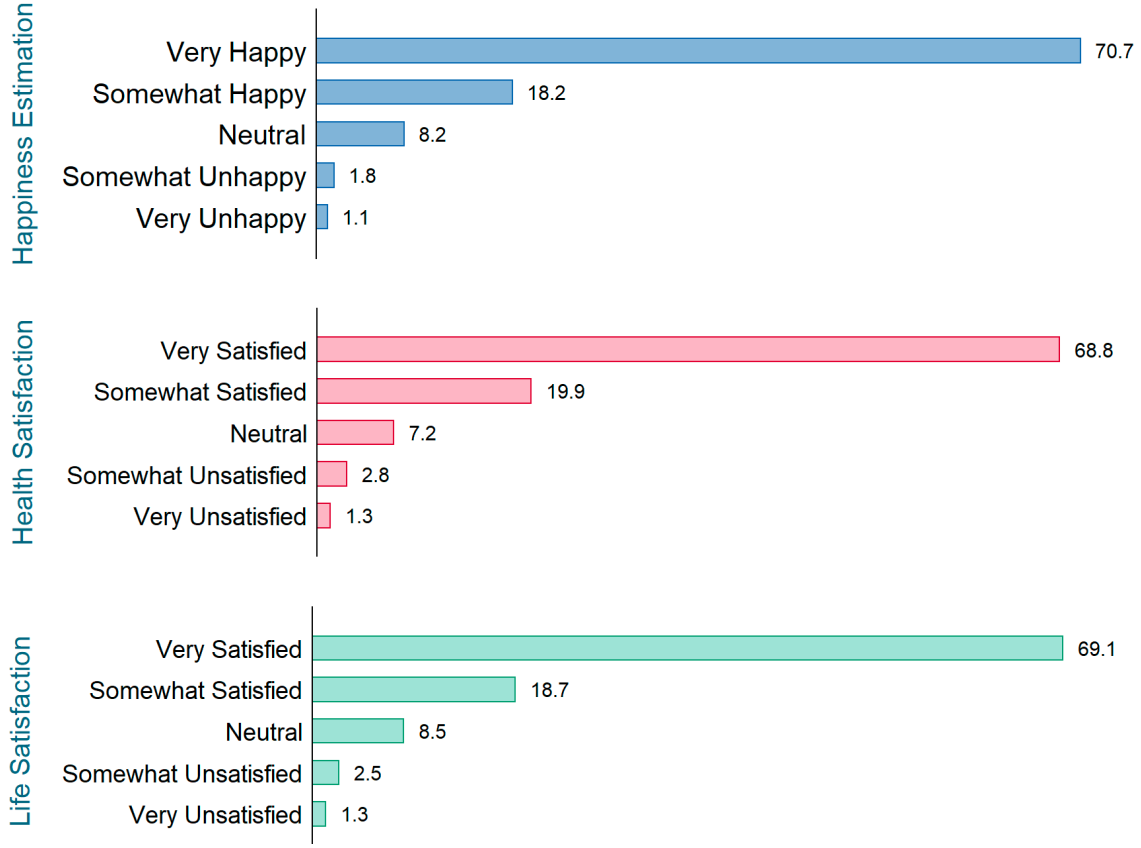

Figure 1. Proportion of self-reported happiness, health, and life satisfaction.

Figure 2 presents the prevalence of perceived happiness stratified by age and sex. The percentage of reporting "Very happy" was higher among women of both age groups. Percentages of reporting "very unhappy" were higher among women aged 15–19 years, whereas the percentage was higher among men in the 20–24 age group. These differences were statistically significant ($p < 0.05$).

Figure 3 presents the prevalence of health satisfaction stratified by age and sex. Unlike for happiness, the percentage of reporting "Very satisfied" was higher among men in both age groups. However, the percentages of reporting "Somewhat unsatisfied" and "Very unsatisfied" were somewhat similar higher among men and women in both age groups. These differences were not statistically significant ($p > 0.05$).

Figure 4 shows the prevalence of life satisfaction stratified by age and sex. Similar to satisfaction about health, men had slightly higher percentages of reporting "Very satisfied" compared to women in both age groups. Women also had higher percentages of reporting "Very unsatisfied". However, these differences were not statistically significant ($p > 0.05$).

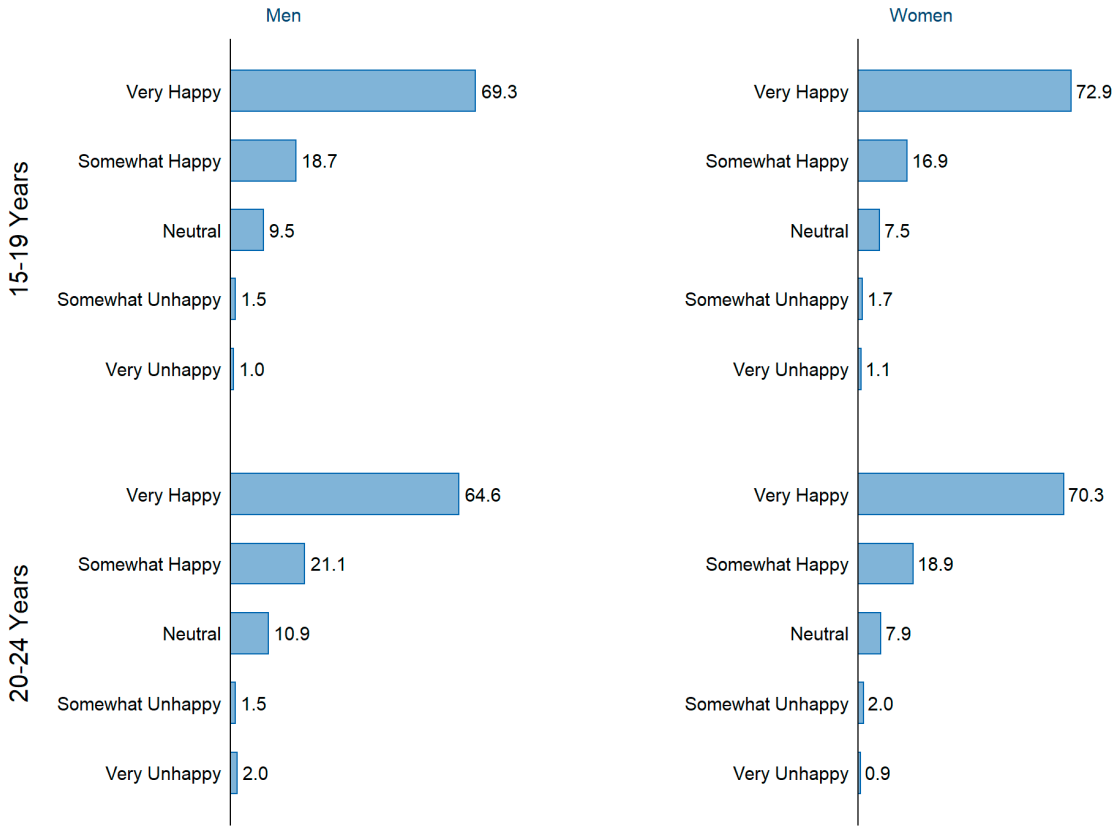

Figure 2. Proportion of men and women by self-reported happiness.

Figure 3. Proportion of men and women by self-reported health status.

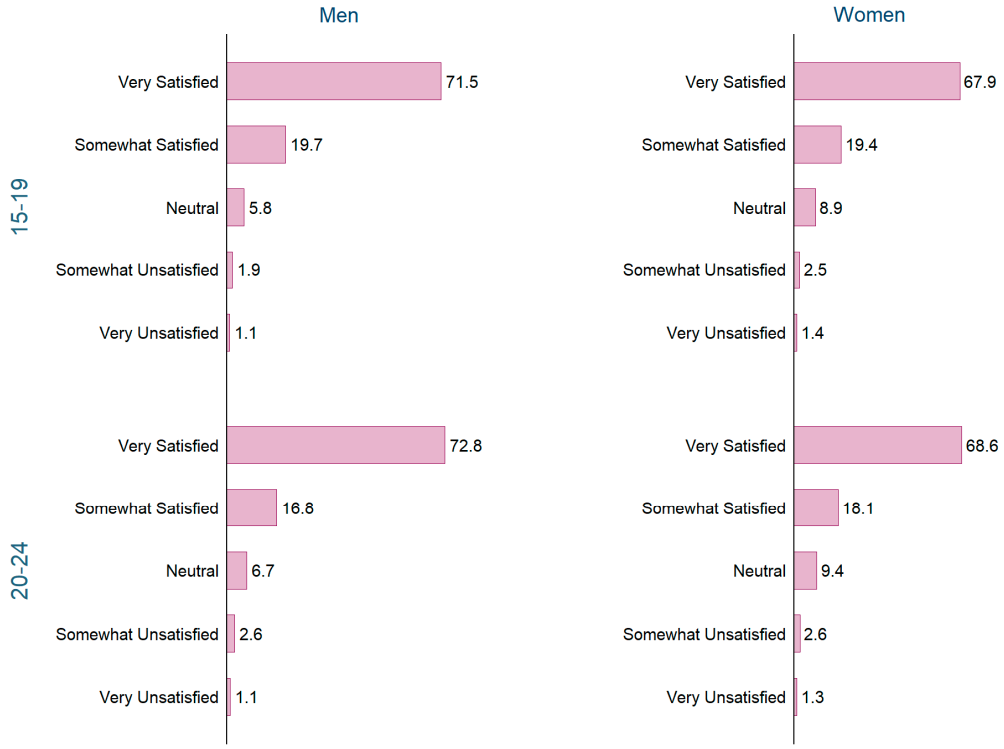

Figure 4. Proportion of men and women by self-reported life satisfaction status.

5.3. Multivariate Regression Analysis

Results of multivariate regression analysis for happiness, health, and quality of life are presented in Tables 2–4, respectively. From Table 2, the odds of reporting positive estimation of happiness were lower among ever married men and women compared to those who were never married. Women in the Southern region had higher odds of reporting satisfaction with happiness compared to those in the Northern region (OR = 1.419, 95% CI = 1.107, 1.819). Men belonging to Ngoni ethnicity had 1.624 times (95% CI = 1.070, 2.464) higher odds of satisfaction with happiness compared to those belonging to Chewa. Not drinking alcohol (OR = 1.140, 95% CI = 1.020, 1.761) and media use (OR = 1.273, 95% CI = 1.082, 2.285) showed higher odds satisfaction with happiness among men, but not among women.

Table 3 shows women who were formerly married had lower odds (OR = 0.687, 95% CI = 0.537, 0.879) of reporting health satisfaction compared to those who were currently married. Compared to the Northern region, being located in the Central (OR = 1.620, 95% CI = 1.246, 2.105) and Southern (OR = 1.904, 95% CI = 1.483, 2.444) region showed higher odds of health satisfaction among women. Living in the highest wealth quintile (Q5) households was associated with higher odds of health satisfaction among both men (OR = 1.960, 95% CI = 1.261, 3.044) and women (OR = 1.523, 95% CI = 1.188, 1.952). Compared to men in Chewa, those in other ethnic groups had higher odds of health satisfaction (except for Tumbuka). Women who had higher education (OR = 4.627, 95% CI = 1.520, 14.08) and had no children (OR = 1.382, 95% CI = 1.098, 1.740) also had higher odds of reporting health satisfaction.

Table 4 shows that being in the 20–24 year group was associated with lower odds of life satisfaction and among men only (OR = 0.731, 95% CI = 0.535, 0.999). Compared to men, women had lower odds of reporting life satisfaction (OR = 0.696, 95% CI = 0.592, 0.818). Compared to the Northern region, being located in the Southern (OR = 0.707, 95% CI = 0.558, 0.897) region showed lower odds of life satisfaction among women. Women living in the highest wealth quintile households had higher odds of reporting life satisfaction (OR = 1.563, 95% CI = 1.037, 2.999). Compared to Chewa women, those in the Lonwe and Ngoni ethnic groups were also more likely to report life satisfaction.

Table 2. Predictors of perceived happiness among men and women. Malawi multiple indicator cluster survey (MICS) 2013–2014.

	Pooled	Men	Women
Age (15–19)			
20–24	0.910	0.954	0.889
	[0.787, 1.053]	[0.725, 1.254]	[0.748, 1.057]
Sex (Men)			
Women	1.123	NA	NA
	[0.965, 1.307]		
Marital status (Never Married)			
Formerly Married	0.563 ***	0.292 ***	0.594 ***
	[0.442, 0.717]	[0.143, 0.598]	[0.458, 0.770]
Currently Married	0.764 *	0.559 *	0.779 *
	[0.617, 0.945]	[0.324, 0.965]	[0.617, 0.985]
Region (Northern)			
Central	1.142	0.811	1.289
	[0.907, 1.438]	[0.496, 1.325]	[0.991, 1.677]
Southern	1.203	0.742	1.419 **
	[0.970, 1.493]	[0.474, 1.162]	[1.107, 1.819]
Living condition (Satisfactory)			
Not Satisfactory	0.912	0.861	0.901
	[0.803, 1.052]	[0.729, 1.230]	[0.779, 1.068]
Ethnicity (Chewa)			
Tumbuka	1.075	1.130	1.039
	[0.827, 1.398]	[0.654, 1.953]	[0.767, 1.405]
Lonwe	1.133	1.449	1.023
	[0.912, 1.408]	[0.953, 2.203]	[0.793, 1.321]
Yao	0.977	1.292	0.875
	[0.777, 1.229]	[0.827, 2.020]	[0.669, 1.145]
Ngoni	0.992	1.624 *	0.835
	[0.813, 1.211]	[1.070, 2.464]	[0.663, 1.051]
Other	1.254 *	1.488	1.160
	[1.006, 1.562]	[0.968, 2.288]	[0.896, 1.501]
Education (None)			
Primary	1.034	0.827	1.112
	[0.636, 1.680]	[0.318, 2.151]	[0.631, 1.958]
Secondary	0.702	0.491	0.799
	[0.429, 1.151]	[0.187, 1.287]	[0.448, 1.424]
Higher	0.738	0.835	0.712
	[0.386, 1.412]	[0.218, 3.199]	[0.337, 1.501]
Have Children (Yes)			
No	1.088	1.566	1.028
	[0.882, 1.343]	[0.914, 2.683]	[0.816, 1.295]
Smokes (Yes)			
No	2.884	1.075	4.460
	[0.232, 35.85]	[0.733, 1.577]	[0.306, 64.98]
Drinks Alcohol (Yes)	0.306	0.692	0.324
	[0.0294, 3.196]	[0.313, 1.291]	[0.0302, 3.479]
No	0.408	1.140 *	0.420
	[0.0395, 4.224]	[1.020, 1.761]	[0.0399, 4.424]
Media use (No)			
Yes	0.938	1.273 *	0.834
	[0.790, 1.113]	[1.082, 2.285]	[0.687, 1.012]

Figure represent odd ratios; 95% confidence intervals in brackets. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table 3. Predictors of perceived health satisfaction among men and women. Malawi MICS 2013–2014.

	Pooled	Men	Women
Age (15–19)			
20–24	1.006	0.937	1.018
	(0.866, 1.168)	(0.687, 1.278)	(0.858, 1.207)
Sex (Men)			
Women	1.064	NA	NA
	(0.906, 1.249)		
Marital status (Currently Married)			
Formerly Married	0.687 **	0.721	0.687 **
	(0.542, 0.871)	(0.285, 1.825)	(0.537, 0.879)
Never Married	0.827	0.694	0.841
	(0.667, 1.026)	(0.385, 1.252)	(0.666, 1.061)
Region (Northern)			
Central	1.553 ***	1.390	1.620 ***
	(1.228, 1.962)	(0.815, 2.373)	(1.246, 2.105)
Southern	1.784 ***	1.405	1.904 ***
	(1.428, 2.228)	(0.854, 2.311)	(1.483, 2.444)
Living condition (Satisfactory)			
Not Satisfactory	1.069	0.932	1.117
	(0.929, 1.229)	(0.701, 1.238)	(0.951, 1.313)
Wealth (Q1)			
Q2	0.926	1.165	0.874
	(0.768, 1.116)	(0.787, 1.723)	(0.707, 1.082)
Q3	1.119	1.372	1.063
	(0.923, 1.356)	(0.918, 2.051)	(0.853, 1.324)
Q4	1.180	1.318	1.152
	(0.970, 1.437)	(0.885, 1.960)	(0.918, 1.445)
Q5	1.596 ***	1.960 **	1.523 ***
	(1.287, 1.981)	(1.261, 3.044)	(1.188, 1.952)
Ethnicity (Chewa)			
Tumbuka	0.995	1.835	0.841
	(0.765, 1.292)	(0.996, 3.381)	(0.627, 1.126)
Lonwe	1.143	1.746 *	1.000
	(0.913, 1.431)	(1.096, 2.782)	(0.773, 1.293)
Yao	1.010	1.898 *	0.834
	(0.797, 1.280)	(1.138, 3.165)	(0.637, 1.092)
Ngoni	1.145	1.695 *	1.017
	(0.930, 1.409)	(1.094, 2.627)	(0.801, 1.290)
Other	1.525 ***	2.354 ***	1.337
	(1.212, 1.918)	(1.444, 3.838)	(0.829, 1.737)
Education (None)			
Primary	1.229	0.501	1.549
	(0.797, 1.895)	(0.152, 1.647)	(0.968, 2.480)
Secondary	1.265	0.503	1.614
	(0.809, 1.977)	(0.151, 1.678)	(0.990, 2.632)
Higher	2.414 *	0.468	4.627 **
	(1.041, 5.598)	(0.0957, 2.291)	(1.520, 14.08)
Have Children (Yes)			
No	1.406 **	1.623	1.382 **
	(1.136, 1.740)	(0.897, 2.936)	(1.098, 1.740)
Drinks Alcohol (Yes)			
	2.420	2.204	2.060
	(0.505, 11.60)	(0.467, 10.40)	(0.422, 10.07)
Media use (No)			
Yes	1.143	1.123	1.136
	(0.979, 1.335)	(0.745, 1.694)	(0.960, 1.345)

Figure represent odd ratios; 95% confidence intervals in brackets. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table 4. Predictors of perceived life satisfaction among men and women. Malawi MICS 2013–2014.

	Pooled	Men	Women
Age (15–19)			
20–24	0.898	0.731 *	0.941
	(0.779, 1.035)	(0.535, 0.999)	(0.802, 1.104)
Sex (Men)			
Women	0.696 ***	NA	NA
	(0.592, 0.818)		
Region (Northern)			
Central	0.863	1.202	0.812
	(0.688, 1.084)	(0.704, 2.052)	(0.631, 1.044)
Southern	0.777 *	1.221	0.707 **
	(0.628, 0.962)	(0.754, 1.975)	(0.558, 0.897)
Wealth (Q1)			
Q2	0.855	0.721	0.888
	(0.706, 1.036)	(0.465, 1.117)	(0.717, 1.100)
Q3	0.979	0.990	0.968
	(0.805, 1.191)	(0.625, 1.568)	(0.779, 1.203)
Q4	0.916	1.012	0.898
	(0.753, 1.116)	(0.640, 1.600)	(0.722, 1.117)
Q5	1.798 *	1.765	1.563 *
	(1.252, 2.976)	(0.482, 2.213)	(1.037, 2.999)
Ethnicity (Chewa)			
Tumbuka	1.093	2.025 *	0.986
	(0.847, 1.411)	(1.022, 4.011)	(0.748, 1.300)
Lonwe	1.367 **	1.103	1.439 **
	(1.114, 1.678)	(0.679, 1.793)	(1.148, 1.804)
Yao	1.064	1.227	1.039
	(0.856, 1.321)	(0.722, 2.088)	(0.819, 1.319)
Ngoni	1.491 ***	0.949	1.677 ***
	(1.216, 1.829)	(0.610, 1.474)	(1.330, 2.115)
Other	1.248 *	1.072	1.310 *
	(1.017, 1.530)	(0.663, 1.732)	(1.044, 1.642)
Have Children (Yes)			
No	0.915	0.583	0.981
	(0.751, 1.115)	(0.324, 1.049)	(0.795, 1.210)
Drinks Alcohol (Yes)			
No	0.643	0.857	0.645
	(0.0819, 5.048)	(0.615, 1.195)	(0.0821, 5.071)

Figure represent odd ratios; 95% confidence intervals in brackets. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

6. Discussion

The present analysis generated several interesting findings. Firstly, the descriptive analysis showed that more than four-fifths of all participants expressed satisfaction with their happiness, health, and life. The relatively higher proportions of health and life satisfaction are quite remarkable given the level of human development in the country. As of 2017, the per capita GDP was estimated to be 338.48 USD, which is one the lowest globally. The country also performs low in terms of human development index, ranking 170 out of 188 countries and territories in 2017 (AfricaNews 2017).

The relationship between the level of national wealth and happiness has been a topic of widespread attention among researchers. In the Western world, the continued economic prosperity and rise of strikingly unequal societies has renewed the debate on whether or not material wealth is actually translating to better health and well-being. In high-income countries, human development policies have been more focused towards enhancing economic prosperity, population health, quality of

life, and overall well-being. In resource-poor countries, on the other hand, the psychosocial aspects of health have so far failed to attract adequate funding and policy attention, especially in African countries. However, in order to foster a more equitable and people-centric development approach, greater investment in psychosocial research is necessary to understand the underlying determinants of health, happiness, and quality of life among the burgeoning population in the African continent.

Our second main result is the disparate association between happiness, health, and life satisfaction with socioeconomic factors. Quite contrary to expectation, satisfaction with happiness did not vary significantly across the wealth quintiles. Higher wealth status also did not consistently result in health and life satisfaction, meaning that the relationship between material well-being and these constructs is not necessarily a straightforward one. Surprisingly, education also did not show any noticeable association with the outcomes, except for health satisfaction. With regard to health satisfaction, the protective effect of wealth status was observed for the highest wealth quintile only. Findings from previous studies reflect a cyclical relationship between health and economic prosperity, as lack of wealth can lead to poorer health, which in return causes a decline in financial well-being through low productivity and increased medical expenditures (Guttmann 2001; Murray 2006; Wagstaff 2002; Cheng et al. 2016).

Intuitively, being financially well-off is a good predictor of higher living standards and providing the preconditions for better health, happiness, and well-being among individuals (Wagstaff 2002). Contrary to some studies, the present study found no clear relationship between media use, smoking or drinking status with happiness, health and life satisfaction (Staccini and Douali 2014; Lew et al. 2018; Welch et al. 2016). One possible explanation behind this may be the lower prevalence of smoking and drinking and decreasing popularity of TV and radio as modes of entertainment among youth. Regarding sociocultural factors, religion did not show any significant association with any of the outcome measures. However, we observed that ethnic disparities in perceived health and happiness were more pronounced in men, whereas that of life satisfaction was more pronounced in women. These contrasting findings are suggestive of the fact that perceived physical and psychosocial well-being at population level can vary greatly depending on the cross-cultural contexts and hence should be given special priority in meeting the health and social needs of the adolescent and youth populations.

Another apparently counterintuitive finding was the inverse relationship between marital status and happiness and health. Having children also did not show any protective effect on the outcomes. In both sexes, the odds of reporting happiness were significantly lower among the currently unmarried participants compared to those who are married. Literature on health and happiness from a marital perspective suggests that currently married individuals report better health status and happiness and share a higher mortality risk than their unmarried counterparts (Robards et al. 2012; Ngamaba and Soni 2018; Bookwala 2011; Chung and Kim 2014). However, the findings may be confounded by the fact that we had no information regarding the quality of marriage. Unhealthy conjugal relationships have been shown to have adverse effects on various aspects of health (Lapate et al. 2014; Choi and Marks 2008; Chen et al. 2015).

Another possible reason might be that the participants were predominantly young, with the majority aged below 20 years. Thus, it is assumable that marital status among the younger population may not result in better health and happiness. The diminishing role on better health outcomes in the context of progressive industrialisation and modernisation have been reported in several Asian countries as well (Fu and Noguchi 2016). As countries in Africa continue to embrace modern lifestyles and culture characteristics of Western countries, exploring the dynamics of family, marriage, and fertility can be rewarding in terms of promoting evidence for better psychosocial health of the population.

Previous studies have shown subjective health and quality of life outcomes among older population and people living with disease conditions (Bishwajit et al. 2017; Klotz et al. 2018; Matsuguma et al. 2018; Calys-Tagoe et al. 2014; Ryan et al. 2007). Currently, there are no other studies showing the predictors of subjective health, happiness, and life satisfaction among healthy adolescent

populations in an African context. A cross-sectional study involving elderly people in Ghana reported that age, sex, educational level, income, and ethnic background were significantly associated with subjective well-being (Calys-Tagoe et al. 2014). A similar study on the elderly population in Nigeria found that socioeconomic status was the biggest indicator of quality of life (Gureje et al. 2008). In South Africa, the strongest predictor of a poor QoL was reported to be psychiatric morbidities, such as depression and anxiety (Mapatwana et al. 2018).

In the traditional model of care, health and illness are generally assessed based on clinical measures that fail to account for the psychosocial dimensions of health (Tuchtenhagen et al. 2015). This is particularly the case in the resource-poor countries like Malawi, where public health remains a largely underappreciated issue on the national development agenda. With the growing understanding of the social determinants of health, however, psychosocial constructs such as quality of life and well-being are getting increasing attention from health economists and policy makers. For instance, individual perceptions of health-related quality of life (HRQoL) are used as a multidimensional concept characterising the overall environmental, social, physical, emotional, and cognitive aspects of life. From this perspective, the findings of our study can be of special importance among health and social researchers, especially in the low-resource settings in Africa. As mentioned earlier, the data were not particularly suitable to explore the predictors of complex constructs, such as happiness and life satisfaction. Nonetheless, the present study is an important contribution to the current literature and also sets the avenue for more in-depth and cross-cultural studies in the areas of subjective well-being in Africa.

Study limitations: Apart from the contribution, we have several important limitations to declare as well. Firstly, the data were not primary, and as such, we were unable to have any control over the selection and measurement of the variables. Lack of data on some key indicators, such as parental background, satisfaction about marriage and sex life, social relationships, leisure-time, safety, and occurrence of health conditions, is perhaps the most important limitation of the study. Secondly, the data were self-reported, which means that the answers are subject to reporting bias. Young people are generally more sensitive about maintaining their self-image and end up giving answers that they find more socially appropriate. Secondly, the relationship between health and life satisfaction with health behaviours such as smoking and drinking is likely to vary by the level of consumption. However, we are unable to measure such nuances of smoking and drinking habits and therefore cannot ensure the robustness of these associations. It is therefore suggested that the findings be interpreted in light of the local contexts that influence these behavioural factors. Further, the sample consisted only of members of the population aged up to 24 years, and hence, the results are not generalisable for the adult population in the country. Lastly, the cross-sectional nature of the data precludes making any causal inference between the explanatory and response variables.

7. Conclusions

Our findings suggest that more than four-fifths of Malawian adolescents and youth reported being satisfied with their happiness, health, and (quality of) life. We also observed the absence of any progressive and positive relationship between happiness, health, and life with some of the most commonly entrusted predictors of general well-being, such as marital status, education, and household wealth status. These findings imply that improving socioeconomic status alone may not result in better subjective well-being and should be accompanied with more conducive environmental and sociocultural conditions congenial to higher living standards in psychosocial health among the younger populations. More in-depth surveys are required to examine the underlying meaning and to test the robustness of the present findings.

Author Contributions: Conceptualization, B.G.; methodology, B.G.; software, B.G.; validation, B.G., S.Y., S.G.; formal analysis, B.G.; investigation, S.Y., S.G; resources, B.G.; data curation, B.G.; writing—original draft preparation, B.G.; S.Y.; S.G.; writing—review and editing, B.G.; S.Y. S.G; visualization, B.G.; supervision, B.G.; project administration, B.G., S.Y., S.G.

Funding: Self-funded by B.G.

Acknowledgments: The authors acknowledge the generous provision of the dataset by DHS that made this study possible.

Conflicts of Interest: The authors declare no conflict of interest.

References

Abdulrahim, Sawsan, and Khalil El Asmar. 2012. Is Self-Rated Health a Valid Measure to Use in Social Inequities and Health Research? Evidence from the PAPFAM Women's Data in Six Arab Countries. *International Journal for Equity in Health* 11: 53. [CrossRef] [PubMed]

AfricaNews. 2017. Malawi's Human Development Index on the Rise-UN Report. *AfricaNews*. March 23. Available online: http://www.africanews.com/2017/03/23/malawi-s-human-development-index-on-the-rise-un-report/ (accessed on 8 December 2018).

Agorastos, Agorastos, Cüneyt Demiralay, and Christian G. Huber. 2014. Influence of Religious Aspects and Personal Beliefs on Psychological Behavior: Focus on Anxiety Disorders. *Psychology Research and Behavior Management* 7: 93–101. [CrossRef]

Amit, Moran, Avraham Abergel, Dan M. Fliss, and Ziv Gil. 2012. The Clinical Importance of Quality-of-Life Scores in Patients with Skull Base Tumors: A Meta-Analysis and Review of the Literature. *Current Oncology Reports* 14: 175–81. [CrossRef]

Amo-Adjei, Joshua, and Akwasi Kumi-Kyereme. 2015. Fruit and vegetable consumption by ecological zone and socioeconomic status in Ghana. *Journal of Biosocial Science* 47: 613–31. [CrossRef] [PubMed]

Balogun, Folusho M., Abieyuwa O. Alohan, and Adebola E. Orimadegun. 2017. Self-Reported Sleep Pattern, Quality, and Problems among Schooling Adolescents in Southwestern Nigeria. *Sleep Medicine* 30: 245–50. [CrossRef] [PubMed]

Becker, Michael A., H. Ralph Schumacher, Katy L. Benjamin, Peter Gorevic, Maria Greenwald, Jeffrey Fessel, Lawrence Edwards, Ariane K. Kawata, Lori Frank, Royce Waltrip, and et al. 2009. Quality of Life and Disability in Patients with Treatment-Failure Gout. *The Journal of Rheumatology* 36: 1041–48. [CrossRef] [PubMed]

Benjamin, Daniel J., Miles S. Kimball, Ori Heffetz, and Alex Rees-Jones. 2012. What Do You Think Would Make You Happier? What Do You Think You Would Choose? *The American Economic Review* 102: 2083–2110. [CrossRef]

Bishwajit, Ghose, Shangfeng Tang, Sanni Yaya, Zhifei He, and Zhanchun Feng. 2017. Lifestyle Behaviors, Subjective Health, and Quality of Life Among Chinese Men Living With Type 2 Diabetes. *American Journal of Men's Health* 11: 357–64. [CrossRef]

Bookwala, Jamila. 2011. Marital Quality as a Moderator of the Effects of Poor Vision on Quality of Life among Older Adults. *The Journals of Gerontology. Series B, Psychological Sciences and Social Sciences* 66: 605–16. [CrossRef]

Braveman, Paula, and Laura Gottlieb. 2014. The Social Determinants of Health: It's Time to Consider the Causes of the Causes. *Public Health Reports (Washington, D.C.: 1974)* 129: 19–31. [CrossRef]

Calys-Tagoe, Benedict N. L., Sandra A. Hewlett, Phyllis Dako-Gyeke, Alfred Edwin Yawson, Nyonuku Akosua Baddoo, Nana Ayegua Hagan Seneadza, George Mensah, Nadia Minicuci, Nirmala Naidoo, Somnath Chatterji, and et al. 2014. Predictors of Subjective Well-Being among Older Ghanaians. *Ghana Medical Journal* 48: 178–84. [CrossRef] [PubMed]

Chen, Jen-Hao, Linda J. Waite, and Diane S. Lauderdale. 2015. Marriage, Relationship Quality, and Sleep among U.S. Older Adults. *Journal of Health and Social Behavior* 56: 356–77. [CrossRef] [PubMed]

Cheng, Tina L., Sara B. Johnson, and Elizabeth Goodman. 2016. Breaking the Intergenerational Cycle of Disadvantage: The Three Generation Approach. *Pediatrics* 137. [CrossRef]

Cheung, Felix, and Richard E. Lucas. 2014. Assessing the Validity of Single-Item Life Satisfaction Measures: Results from Three Large Samples. *Quality of Life Research: An International Journal of Quality of Life Aspects of Treatment, Care and Rehabilitation* 23: 2809–18. [CrossRef]

Chin, Brian. 2010. Income, Health, and Well-Being in Rural Malawi. *Demographic Research* 23: 997–1030. [CrossRef] [PubMed]

Choi, Heejeong, and Nadine F. Marks. 2008. Marital Conflict, Depressive Symptoms, and Functional Impairment. *Journal of Marriage and the Family* 70: 377–90. [CrossRef]

Chung, Woojin, and Roeul Kim. 2014. Does Marriage Really Matter to Health? Intra- and Inter-Country Evidence from China, Japan, Taiwan, and the Republic of Korea. *PLoS ONE* 9: e0104868. [CrossRef] [PubMed]

Decker, Martha, and Norman A. Constantine. 2011. Factors Associated with Contraceptive Use in Angola. *African Journal of Reproductive Health* 15: 68–77.

DeSalvo, Karen B., Nicole Bloser, Kristi Reynolds, Jiang He, and Paul Muntner. 2006. Mortality Prediction with a Single General Self-Rated Health Question. *Journal of General Internal Medicine* 21: 267–75. [CrossRef]

Development Impact Guest Blogger. 2016. Why Do Harmful Norms Persist? Female Genital Cutting in Burkina Faso: Guest Post by Lindsey Novak. Text. Impact Evaluations. December 19. Available online: http://blogs.worldbank.org/impactevaluations/why-do-harmful-norms-persist-female-genital-cutting-burkina-faso-guest-post-lindsey-novak (accessed on 7 November 2018).

Fu, Rong, and Haruko Noguchi. 2016. Does Marriage Make Us Healthier? Inter-Country Comparative Evidence from China, Japan, and Korea. *PLoS ONE* 11: e0148990. [CrossRef]

Galavotti, Christine, and Daniel J. Schnell. 1994. Relationship between Contraceptive Method Choice and Beliefs about HIV and Pregnancy Prevention. *Sexually Transmitted Diseases* 21: 5–7. [CrossRef]

Gate, Lucy, Charlotte Warren-Gash, Alex Clarke, Angela Bartley, Elizabeth Fowler, Gerry Semple, Jason Strelitz, Peter Dutey, Adrian Tookman, and Alison Rodger. 2016. Promoting Lifestyle Behaviour Change and Well-Being in Hospital Patients: A Pilot Study of an Evidence-Based Psychological Intervention. *Journal of Public Health* 38: e292–e300. [CrossRef] [PubMed]

Ghose, Bishwajit. 2017. Frequency of TV Viewing and Prevalence of Overweight and Obesity among Adult Women in Bangladesh: A Cross-Sectional Study. *BMJ Open* 7. [CrossRef]

Gooneratne, Nalaka S., and Michael V. Vitiello. 2014. Sleep In Older Adults: Normative Changes, Sleep Disorders, and Treatment Options. *Clinics in Geriatric Medicine* 30: 591–627. [CrossRef] [PubMed]

Gureje, Oye, Lola Kola, Ebenezer Afolabi, and Benjamin Oladapo Olley. 2008. Determinants of Quality of Life of Elderly Nigerians: Results from the Ibadan Study of Ageing. *African Journal of Medicine and Medical Sciences* 37: 239–47. [PubMed]

Guttmann, Astrid. 2001. Child Poverty, Health and Health Care Use in Canada. *Paediatrics & Child Health* 6: 509–13.

Hays, Ron D., Karen L. Spritzer, William W. Thompson, and David Cella. 2015. U.S. General Population Estimate for 'Excellent' to 'Poor' Self-Rated Health Item. *Journal of General Internal Medicine* 30: 1511–16. [CrossRef] [PubMed]

He, Zhifei, Zhaohui Cheng, Ghose Bishwajit, and Dongsheng Zou. 2018. Wealth Inequality as a Predictor of Subjective Health, Happiness and Life Satisfaction among Nepalese Women. *International Journal of Environmental Research and Public Health* 15: 2836. [CrossRef] [PubMed]

Hirve, Siddhivinayak. 2014. 'In General, How Do You Feel Today?'—Self-Rated Health in the Context of Aging in India. *Global Health Action* 7. [CrossRef]

Idler, Ellen L., and Yael Benyamini. 1997. Self-Rated Health and Mortality: A Review of Twenty-Seven Community Studies. *Journal of Health and Social Behavior* 38: 21–37. [CrossRef]

Idler, Ellen L., and Stanislav V. Kasl. 1995. Self-Ratings of Health: Do They Also Predict Change in Functional Ability? *The Journals of Gerontology. Series B, Psychological Sciences and Social Sciences* 50: S344–S353. [CrossRef]

Klotz, Anna-Luisa, Benjamin Tauber, Anna-Lena Schubert, Alexander Jochen Hassel, Johannes Schröder, Hans-Werner Wahl, Peter Rammelsberg, and Andreas Zenthöfer. 2018. Oral Health-Related Quality of Life as a Predictor of Subjective Well-Being among Older Adults-A Decade-Long Longitudinal Cohort Study. *Community Dentistry and Oral Epidemiology* 46: 631–38. [CrossRef]

Lapate, Regina C., Carien M. van Reekum, Stacey M. Schaefer, Lawrence L. Greischar, Catherine J. Norris, David R. W. Bachhuber, Carol D. Ryff, and Richard J. Davidson. 2014. Prolonged Marital Stress Is Associated with Short-Lived Responses to Positive Stimuli. *Psychophysiology* 51: 499–509. [CrossRef]

Lew, D., H. Xian, Z. Qian, and M. G. Vaughn. 2018. Examining the Relationships between Life Satisfaction and Alcohol, Tobacco and Marijuana Use among School-Aged Children. *Journal of Public Health*. [CrossRef]

Mail Online. 2010. Going to Church Makes You Happy: Religion Affirms Sense of Belonging. *Mail Online*. Available online: https://www.dailymail.co.uk/news/article-1336371/Going-church-makes-happy-Religion-affirms-sense-belonging.html (accessed on 5 December 2018).

Mapatwana, Dumakazi, Andrew Tomita, Jonathan Burns, and Lesley Robertson. 2018. Predictors of Quality of Life among Community Psychiatric Patients in a Peri-Urban District of Gauteng Province, South Africa. *The South African Journal of Psychiatry: SAJP: The Journal of the Society of Psychiatrists of South Africa* 24. [CrossRef]

Matsuguma, Shinichiro, Kazuno Negishi, Motoko Kawashima, Ikuko Toda, Masahiko Ayaki, and Kazuo Tsubota. 2018. Patients' Satisfaction and Subjective Happiness after Refractive Surgery for Myopia. *Patient Preference and Adherence* 12: 1901–6. [CrossRef] [PubMed]

Murray, Sally. 2006. Poverty and Health. *CMAJ: Canadian Medical Association Journal* 174: 923. [CrossRef] [PubMed]

Ngamaba, Kayonda Hubert, and Debbie Soni. 2018. Are Happiness and Life Satisfaction Different Across Religious Groups? Exploring Determinants of Happiness and Life Satisfaction. *Journal of Religion and Health* 57: 2118–39. [CrossRef] [PubMed]

Robards, James, Maria Evandrou, Jane Falkingham, and Athina Vlachantoni. 2012. Marital Status, Health and Mortality. *Maturitas* 73: 295–99. [CrossRef] [PubMed]

Rosero-Bixby, Luis, and William H. Dow. 2016. Exploring Why Costa Rica Outperforms the United States in Life Expectancy: A Tale of Two Inequality Gradients. *Proceedings of the National Academy of Sciences of the United States of America* 113: 1130–37. [CrossRef] [PubMed]

Ryan, Kelly A., Lisa J. Rapport, Tanya E. Sherman, Robin A. Hanks, Robert Lisak, and Omar Khan. 2007. Predictors of Subjective Well-Being among Individuals with Multiple Sclerosis. *The Clinical Neuropsychologist* 21: 239–62. [CrossRef] [PubMed]

Sithey, Gyambo, Anne-Marie Thow, and Mu Li. 2015. Gross National Happiness and Health: Lessons from Bhutan. *Bulletin of the World Health Organization* 93: 514. [CrossRef] [PubMed]

Son, Dinh Thai, Juhwan Oh, Jongho Heo, Nguyen Van Huy, Hoang Van Minh, Sugy Choi, and Luu Ngoc Hoat. 2016. Early Sexual Initiation and Multiple Sexual Partners among Vietnamese Women: Analysis from the Multiple Indicator Cluster Survey, 2011. *Global Health Action* 9. [CrossRef]

Staccini, Pascal, and Nassim Douali. 2014. Social media and patient health outcomes. Findings from the yearbook 2014 section on consumer health informatics. *Yearbook of Medical Informatics* 9: 195–98. [CrossRef]

Tsai, Alexander C., Bernard Kakuhikire, Jessica M. Perkins, Dagmar Vořechovská, Amy Q. McDonough, Elizabeth L. Ogburn, Jordan M. Downey, and David R. Bangsberg. 2017. Measuring Personal Beliefs and Perceived Norms about Intimate Partner Violence: Population-Based Survey Experiment in Rural Uganda. *PLoS Medicine* 14: e1002303. [CrossRef]

Tuchtenhagen, Simone, Carmela Rampazzo Bresolin, Fernanda Tomazoni, Guilherme Nascimento da Rosa, Joana Possamai Del Fabro, Fausto Medeiros Mendes, José Leopoldo Ferreira Antunes, and Thiago Machado Ardenghi. 2015. The Influence of Normative and Subjective Oral Health Status on Schoolchildren's Happiness. *BMC Oral Health* 15. [CrossRef]

Wagstaff, Adam. 2002. Poverty and Health Sector Inequalities. *Bulletin of the World Health Organization* 80: 97–105.

Welch, Vivien, Jennifer Petkovic, Jordi Pardo Pardo, Tamara Rader, and Peter Tugwell. 2016. Interactive Social Media Interventions to Promote Health Equity: An Overview of Reviews. *Health Promotion and Chronic Disease Prevention in Canada: Research, Policy and Practice* 36: 63–75. [CrossRef]

Yaya, Sanni, Ghose Bishwajit, and Vaibhav Shah. 2016. Wealth, Education and Urban–Rural Inequality and Maternal Healthcare Service Usage in Malawi. *BMJ Global Health* 1. [CrossRef]

Zarini, Gustavo G., Joan A. Vaccaro, Maria A. Canossa Terris, Joel C. Exebio, Laura Tokayer, Janet Antwi, Sahar Ajabshir, Amanpreet Cheema, and Fatma G. Huffman. 2014. Lifestyle Behaviors and Self-Rated Health: The Living for Health Program. *Journal of Environmental and Public Health* 2014. [CrossRef]