Unemployment and self-rated health in Ghana: are there gender differences?

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Abstract
Purpose – A large extant literature examines the association between unemployment and self-rated health. Most of these studies reveal that unemployment diminishes self-rated health. Another strand of this literature, albeit sparse, suggests that the relationship between unemployment and self-rated health is gendered. The purpose of this paper is twofold: first, to examine whether unemployment is correlated with self-rated health in Ghana; and second, to explore whether and to what extent men differ from women on the basis of this relationship.
Design/methodology/approach – The authors used data from the Wave 6 of World Values Survey in Ghana (n = 1552) and probit and instrumental variable probit regressions to empirically examine the association between unemployment and self-rated health in Ghana.
Findings – The results confirm that unemployment is negatively correlated with self-rated health among Ghanaians. Specifically, the unemployed are about 6.84 – 7.20 percent less likely to report good health status in a pooled sample. Further, after correcting for endogeneity, unemployed men are about 26.68 percent less likely to report good health. However, the association is not statistically significant for unemployed women.
Originality/value – The study contributes to the literature by providing empirical evidence from Ghana.
Keywords Ghana, Unemployment, Self-rated health, Gender differences, Self-reported health
Paper type Research paper

1. Introduction
Ghana has been bedeviled by unemployment for a long time (e.g. Sackey and Osei, 2006; Overå, 2007), a phenomenon that is more pervasive in urban towns than in rural areas (Sackey and Osei, 2006). Although data on unemployment statistics for the country are scanty, estimates from the micro-level survey data suggest that the unemployment rate in Ghana is high. For instance, the unemployment rate based on Afrobarometer Survey in 2008 was 28.8 and 27.4 percent in both 2012 and 2014. Unemployment has many deleterious consequences. Among these, research in epidemiology has shown that unemployment is strongly correlated with diverse adverse health outcomes (e.g. Forbes and McGregor, 1984; Gerdtham and Johannesson, 2003). A longitudinal study of Swedish adults followed between 10 and 17 years revealed that “Unemployment significantly increases the risk of being dead at the end of follow-up by nearly 50%” (Gerdtham and Johannesson, 2003, p. 505). In the USA, a unit increase in the unemployment rate is associated with a 6 percent increase in the probability of dying among unemployed people (Halliday, 2014).

The majority of studies that have examined the relationship between unemployment and health have focused on how unemployment influences the objective measures of health such as mortality (e.g. Iversen et al., 1987; Moser et al., 1987; Martikainen, 1990; Stefansson, 1991; Martikainen et al., 2007; Lundin et al., 2010; Garcy and Vägerö, 2012), suicide (e.g. Smith, 1985a, b; Preti, 2003; Blakely et al., 2003; Voss et al., 2004; Andres, 2005; Kuroki, 2010), alcoholism (e.g. Crawford et al., 1987; Montgomery et al., 1998) and
depression (e.g. Dooley et al., 1994; Stankunas et al., 2006). For instance, von der Lippe and Rattay (2016) found that unemployment had the strongest negative effect on self-rated health among Germans. Iversen et al. (1987) examined the effect of unemployment on mortality in Denmark and found that after controlling for other covariates, mortality rates were higher among the unemployed relative to their employed counterparts. Other studies have corroborated the finding that unemployment increases the risk of mortality in Sweden (e.g. Stefansson, 1991; Lundin et al., 2010; Garcy and Vågerö, 2012), Finland (e.g. Martikainen, 1990; Martikainen et al., 2007), UK (Moser et al., 1984, 1987; Blakely et al., 2003) and the USA (e.g. McLeod et al., 2012; Kposowa, 2001; Halliday, 2014).

There are several explanations for the negative correlation between unemployment and health. One explanation is that the relationship may be due to a selection bias (e.g. Schmitz, 2011). It may be that workers with poor health become unemployed, and evidence on this is provided by several studies (e.g. Arrow, 1996; Riphahn, 1999). Conversely, being unwell might lead to long-term or protracted unemployment (Stewart, 2001). Beyond income, gainful employment affords people social relationships that define the meaning of life (Junankar, 1991). Such social relationships may bestow on the individual higher stocks of social capital. Because social capital significantly influences health (e.g. Kawachi et al., 1999; Yip et al., 2007), the loss of social relationships emanating from unemployment could diminish the individual's health. Furthermore, both the unemployed and their immediate family may suffer from unemployment (Smith, 1985a, b) because unemployment may cause stress and anxiety for them (Junankar, 1991). Unemployment may also lead to depression, social exclusion and increased risk of suicide (e.g. Kieselbach, 2003; Milner et al., 2013).

While studies on the effect of unemployment on health are replete in the literature, nearly all of them have been done within developed country contexts. In particular, studies on this topic in Africa are lacking. The objectives of this paper are twofold. First, we examine whether there is an association between unemployment and self-reported health in Ghana. Second, we explore whether there are gender differences in the association between unemployment and self-rated health. To empirically address these issues, we utilize survey data from the Wave 6 of the World Values Surveys. The results from probit and instrument variable (IV) probit regressions confirm that unemployment is negatively correlated with self-rated health among Ghanaians. Specifically, the unemployed are about 6.84–7.20 percent less likely to report good health status in a pooled sample. Further, after correcting for endogeneity, unemployed men are about 26.68 percent less likely to report good health. However, the association is not statistically significant for unemployed women.

2. Background literature

2.1 Unemployment and self-rated health

As a result of the difficulty of observing the actual health condition of people in developing countries, scholars embrace self-reports of health status because they are generally easier, less costly and less time-consuming to generate (Freidoony et al., 2015). From a labor economics perspective, unemployment typically refers to physically and psychologically fit individuals of legal working age who are actively seeking work but do not have a paid job within a reference period (International Labour Organization, 1990). There is ample evidence from diverse fields such as life sciences (e.g. medicine) and social sciences (e.g. psychology) that unemployment has adverse effects that go beyond those associated with income losses (Frey, 2008; McKee-Ryan et al., 2005). Unemployment negatively impacts physical health including cardiovascular diseases (Griep et al., 2015; McKee-Ryan et al., 2005), psychosomatic disorders (Paul and Moser, 2006; Griep et al., 2015) and subjective physical health (Griep et al., 2015; McKee-Ryan et al., 2005). Unemployment is also associated with measures of psychological ill-being such as depression, anxiety, reduced hope and increased dissatisfaction with life (Frese and Mohr, 1987; Paul and Moser, 2006; McKee-Ryan et al., 2005; Mohr and Otto, 2011).
Prior studies have shown that unemployment is a salient predictor of self-rated health (e.g. Forbes and McGregor, 1984; Gerdtham and Johannesson, 2003; Giatti et al., 2010; Blakely et al., 2003; Voss et al., 2004; Andres, 2005; Kuroki, 2010). In a study to examine whether unemployment and socio-economic and neighborhood characteristics of people are correlated with self-rated health in Brazilian cites, Giatti et al. (2010) found a strong association between unemployment and poor self-rated health, irrespective of the personal or contextual characteristics of the individual. Similarly, Tøge and Blekesaune (2015) used longitudinal data for 28 European countries from 2008 to 2011 to examine the effect of unemployment – purportedly exacerbated by the Great Recession – on health. They observed that declines in health status across the respondents were partly attributable to unemployment as people tended to report poorer health status as they became unemployed.

Marcus (2013) employed the German Socio-Economic Panel Study to analyze the effect of unemployment on mental health of Germans and found that in addition to the unemployed being directly affected, their spouses were also as much strongly affected by the unemployment as the unemployed with respect to mental health deterioration. This led the author to conclude that previous empirical studies that examined the nexus between unemployment and health had underestimated the public health costs of unemployment as they usually failed to account for the potential damages experienced by spouses of unemployed people. Other studies have shown that the effect of unemployment is even more detrimental during periods of high and prolonged unemployment (e.g. Kieselbach, 2003; Kostrzewski and Worach-Kardas, 2014; Drydakis, 2015). Long-term unemployment may even lead to social exclusion, especially among the youth (Kieselbach, 2003), and increased risk of suicide (Milner et al., 2013). Nonetheless, a limited number of empirical studies have found no significant association between unemployment and health (e.g. Merriam, 1987; Schmitz, 2011).

2.2 Genderedness of the relationship between unemployment and health
As noted above, the overwhelming majority of studies on the health consequences of unemployment have revealed that unemployment is associated with deteriorating health status. A pertinent interest that naturally arises therefore is whether there are gender dimensions of the association between unemployment and health. In this regard, some scholars have examined the relationship through gender lenses (e.g. Artazcoz et al., 2004; Gordo, 2006; Drydakis, 2015; Reine et al., 2013). The results are mixed. On the one hand, some studies have argued that the effect of unemployment on health for men exceeds the effect for women (e.g. Artazcoz et al., 2004; Drydakis, 2015; Reine et al., 2013). For instance, Drydakis (2015) reported that in Greece, the effect of unemployment on health or mental health was worse for women than for men during the global financial crisis. Reine et al. (2013) have discovered that although unemployment leads to high alcohol consumption, the effect of unemployment on health is greater for women in Northern Sweden. In addition, life expectancy tends to be higher among females than for males, yet women tend to report a relatively poorer health status than their male counterparts (Jylhä et al., 1998; Hanibuchi et al., 2012; Phaswana-Mafuya et al., 2013). A plausible explanation for this observation is that males tend to suffer from life-threatening diseases relatively much more than women, while women are usually beset with relatively more nonfatal chronic conditions (Jylhä et al., 1998).

On the other hand, very few studies have advanced the contrary argument, which is that women are more affected by unemployment than by men (Gordo, 2006; Kaleta et al., 2008; Bambra and Eikemo, 2008). In their study of the association between unemployment and risk of morbidity and mortality in 23 European countries and focusing on the differences in state social protection programs, Bambra and Eikemo (2008) found a relatively stronger effect of unemployment for men than for women. Their explanations are that first, women tend to receive lower social insurance unemployment benefits because they tend to have a checkered employment history. Second, it may be that the selection effect may be stronger
for women than for men because unhealthy women may be more likely to become unemployed than their male counterparts (Bambra and Eikemo, 2008, p. 97). Kaleta et al. (2008) also found that economic circumstances are associated with health for only men in that men with lower levels of income are at a higher risk of reporting poor health.

The evidence on the genderedness of the association between unemployment and health may also take a temporal dimension. For instance, the results from a German study have shown that while unemployment does influence health status among men in both the short and long run, it only affects women’s health in the long run (Gordo, 2006). However, other scholars do not find any gender differences with respect to this relationship (e.g. Hultman et al., 2006; Hammarström et al., 2011). For instance, Hammarström et al. (2011) found that although unemployment was associated with various health outcomes (e.g. smoking and alcohol consumption) for the pooled sample, no significant gender differences were found for self-rated health in Northern Sweden, leading them to conclude that “Men are not hit more by the health consequences of unemployment in a Swedish context with a high participation rate for women in the labor market” (p. 192). Thus, the extant literature remains inconclusive on whether or not there are gender differences in the association between unemployment and health. Our study contributes to this literature by providing empirical evidence from Ghana.

3. Data and methods
We used data from the Wave 6 of the World Values Survey conducted in Ghana in 2012 for our empirical analyses. The World Values Survey is a global research network that conducts surveys in many countries around the world to gauge public attitudes and perceptions about varied social, economic and political phenomena (World Values Survey Association, 2016). In Ghana, a nationally representative sample of 1,552 respondents was interviewed on a face-to-face basis in eight of ten regions by using random sampling but stratified by gender. Some researchers contend that self-rated health, albeit a subjective assessment of one’s own health status (e.g. Darviri et al., 2012; Damián et al., 2008; Sun et al., 2007), can be construed as a comprehensive perception of health, encompassing the biological, psychological and social aspects of one’s health (Guimarães et al., 2012) that may be subjected to the physical, psychological and environmental factors affecting them (Damián et al., 2008). Extensively used as a reliable indicator of health in public health research, self-rated health is often used to predict actual future health, disability, functional ability and mortality (Arnadottir et al., 2011; Alves and Rodrigues, 2005), especially among elderly people (Sun et al., 2007; Damián et al., 2008; Darviri et al., 2012).

Consistent with the standard operationalization of self-rated health in the literature where a single question is often used (Mansyur et al., 2008; Flavin et al., 2011; Gandelman and Hernández-Murillo, 2013; Olafsdottir et al., 2014), we operationalized our dependent variable (good health = 1 if the respondent indicated “good” or “very good” and 0 otherwise) based on responses to the World Values Survey question:

All in all, how would you describe your state of health these days?

The responses were 1 = very good, 2 = good, 3 = fair and 4 = poor. To the extent that perceptions about one’s health are closely correlated with their clinical outcomes (Idler and Benyamini, 1997) and strongly connected to mortality and morbidity among others (Sun et al. 2007; Phaswana-Mafuya et al., 2013; Molarius and Janson 2002), one could argue that self-rated health is a useful and reliable measure of actual health (Franks et al., 2003; Hennessy et al., 1994). The respondents were also asked about their employment status. We coded “Unemployed” as equal to 1 if the respondent reported being unemployed at the time of the survey, and 0 otherwise. We control for the sociodemographic characteristics and other variables identified as covariates of self-rated health in the empirical literature.
In addition, Ghana has ten administrative regions that differ with respect to culture, institutions and economic circumstances[3]. Hence, we control for region-level heterogeneities by including region-level fixed effects.

We note that unemployed people are more likely than their employed counterparts to report poor health. However, unhealthy people are more likely to be unemployed. Therefore, a potential endogeneity problem arises. To address this problem, we implement IV probit estimations. Let $HS$ be the individual’s health status. The formal model for the association between health and unemployment is given by the following equations:

$$HS_i = U_i \beta + X_i \gamma + e_i,$$

$$U_i = X_i \alpha + Z_i \theta + \epsilon_i,$$

where $U$ is unemployment, $X$ is a vector of exogenous control variables and $Z$ is an instrumental variable for unemployment. $\beta$, $\gamma$, $\alpha$, and $\theta$ are the parameters to be estimated, $e$ and $\epsilon$ are the idiosyncratic error terms, and $i$ indexes the individual.

A suitable instrument for unemployment should be correlated with unemployment but uncorrelated with the error term in Equation (1). We used two of such instruments: sector of employment and whether the town of residence of the respondent is a city. The public sector in Ghana provides more job stability and security than the private sector. Hence, employment in the private sector is more associated with the probability of a layoff. This is consistent with Farré et al. (2018) who used employment in the construction sector as an instrument for unemployment in Spain where the collapse of the sector resulted in a lot of job losses. In addition, Kuhn et al. (2009) used plant closure as an instrument for unemployment. Prior studies have also shown that unemployment is more pervasive in urban towns in Ghana than in the rural areas (Otoo et al., 2009; Sackey and Osei, 2006).

Hence, we also used “cities” to instrument for unemployment[4].

4. Results and discussion

Table I reports the summary statistics along with the descriptions of the variables used in the study. About 88.72 percent of the respondents reported being in good health. About 14.95 percent of the respondents reported being unemployed[5]. The respondents’ ages ranged from 18 to 82 with an average age of 31 years. About 49.74 percent of them were female. Regarding educational attainments, about 45.43 percent of the respondents had attained a maximum of primary school education, 43.11 percent had attained secondary school education, while only 11.47 percent had attained a university education. The majority of them were Protestants compared with 13.66 and 12.18 percent Roman Catholics and Muslims, respectively. Nearly 60 percent of them also reported being Akan, 13.40 percent were Ewe and 9.79 percent were Ga-Adangbe. In addition, 44.78 percent of the respondents reported being married, while only 3.87 percent of them were divorced or separated. The majority of the respondents (51.35 percent) were either single or widowed. The average respondent had less than two children.

The distribution of the responses to the health question by gender is reported in Figure 1. About 2.10 percent of men and 2.60 percent of women reported being in poor health status, while 6.90 percent of men and 10.90 percent of women reported their health status as fair. Regarding good and very good health status, 35.60 percent and 55.30 percent of men reported their health status as good and very good, respectively, with the corresponding figures for their female counterparts being 36.70 percent and 49.90 percent. The observation from these reports is that women reported relatively worse health status than men. Altogether, only about 11.30 percent of the respondents reported being in either poor health
or fair health compared with 88.72 percent who indicated being in good or very good health as reported above.

Table II reports the probit and IV probit regression results when good health is regressed on unemployment status while controlling for other variables. We started by running probit regression with and without the region-level fixed effects for the pooled sample (Models 1 and 2). We then corrected for endogeneity and reran the models using IV probit (Models 3 and 4). Our results revealed that unemployment is negatively and significantly correlated with good health at the 1 percent level for Models 1 and 2 and at the 10 percent level for Models 3 and 4.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
<th>Mean</th>
<th>SD</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good health</td>
<td>= 1 if the respondent indicated good or very good to the question: “All in all, how would you describe your state of health these days?”, 0 otherwise</td>
<td>0.8872</td>
<td>0.3164</td>
<td>0–1</td>
</tr>
<tr>
<td>Unemployed</td>
<td>= 1 if the respondent was unemployed, 0 otherwise</td>
<td>0.1495</td>
<td>0.3567</td>
<td>0–1</td>
</tr>
<tr>
<td>Age</td>
<td>Age of the respondent</td>
<td>30.9246</td>
<td>12.7027</td>
<td>18–82</td>
</tr>
<tr>
<td>Female</td>
<td>= 1 if female, 0 otherwise</td>
<td>0.4974</td>
<td>0.5002</td>
<td>0–1</td>
</tr>
<tr>
<td>Income scale</td>
<td>Income decline within which the respondent believes that their household income belongs to Ghana</td>
<td>4.8524</td>
<td>2.0605</td>
<td>1–10</td>
</tr>
<tr>
<td>Generalized trust</td>
<td></td>
<td>0.0496</td>
<td>0.2172</td>
<td>0–1</td>
</tr>
<tr>
<td>Education</td>
<td>Primary or less</td>
<td>= 1 if the respondent’s highest educational attainment was primary school education, or had no formal education, 0 otherwise</td>
<td>0.4543</td>
<td>0.4981</td>
</tr>
<tr>
<td>Secondary</td>
<td>= 1 if the respondent’s highest educational attainment was secondary school education, 0 otherwise</td>
<td>0.4311</td>
<td>0.4954</td>
<td>0–1</td>
</tr>
<tr>
<td>University</td>
<td>= 1 if the respondent’s highest educational attainment was university education (including diploma, bachelor’s degree, or more), 0 otherwise</td>
<td>0.1147</td>
<td>0.3188</td>
<td>0–1</td>
</tr>
<tr>
<td>Roman Catholic</td>
<td>= 1 if the respondent’s religious denomination was Roman Catholic, 0 otherwise</td>
<td>0.1366</td>
<td>0.3435</td>
<td>0–1</td>
</tr>
<tr>
<td>Protestant</td>
<td>= 1 if the respondent’s religious denomination was Protestant (e.g. Anglican, Methodist, Presbyterian, etc.), 0 otherwise</td>
<td>0.5631</td>
<td>0.4962</td>
<td>0–1</td>
</tr>
<tr>
<td>Muslim</td>
<td>= 1 if the respondent’s religious denomination was Muslim, 0 otherwise</td>
<td>0.1218</td>
<td>0.3271</td>
<td>0–1</td>
</tr>
<tr>
<td>Other religious denomination</td>
<td>= 1 if the respondent’s religious denomination was other denomination other than Roman Catholic, Protestant, or Muslim, 0 otherwise</td>
<td>0.1785</td>
<td>0.3830</td>
<td>0–1</td>
</tr>
<tr>
<td>Akan</td>
<td>= 1 if the respondent indicated their ethnic group as Akan, 0 otherwise</td>
<td>0.5954</td>
<td>0.4910</td>
<td>0–1</td>
</tr>
<tr>
<td>Ewe</td>
<td>= 1 if the respondent indicated their ethnic group as Ewe, 0 otherwise</td>
<td>0.1340</td>
<td>0.3408</td>
<td>0–1</td>
</tr>
<tr>
<td>Ga-Adangbe</td>
<td>= 1 if the respondent indicated their ethnic group as Ga-Adangbe, 0 otherwise</td>
<td>0.0979</td>
<td>0.2973</td>
<td>0–1</td>
</tr>
<tr>
<td>Other ethnic group</td>
<td>= 1 if the respondent indicated other ethnic group other than Akan, Ewe, or Ga-Adangbe, 0 otherwise</td>
<td>0.1720</td>
<td>0.3775</td>
<td>0–1</td>
</tr>
<tr>
<td>Married</td>
<td>= 1 if the respondent was married or living together as a couple, 0 otherwise</td>
<td>0.4478</td>
<td>0.4974</td>
<td>0–1</td>
</tr>
<tr>
<td>Divorced/Separated</td>
<td>= 1 if the respondent was divorced or separated, 0 otherwise</td>
<td>0.0387</td>
<td>0.1928</td>
<td>0–1</td>
</tr>
<tr>
<td>Other marital status</td>
<td>= 1 if the respondent was single or widowed, 0 otherwise</td>
<td>0.5135</td>
<td>0.5000</td>
<td>0–1</td>
</tr>
<tr>
<td>Children</td>
<td>Respondent’s number of children</td>
<td>1.5296</td>
<td>2.0056</td>
<td>0–8a</td>
</tr>
<tr>
<td>City</td>
<td>= 1 if the town has at least 50,000 people, 0 otherwise</td>
<td>0.0238</td>
<td>0.1526</td>
<td>0–1</td>
</tr>
<tr>
<td>Private sector</td>
<td>= 1 if the respondent was employed or previously employed in the private sector, 0 otherwise</td>
<td>0.6347</td>
<td>0.4817</td>
<td>0–1</td>
</tr>
</tbody>
</table>

**Note:** a9 = 8 or more children
Thus, people who were unemployed were significantly less likely to report good health status. Specifically, for the pooled sample, the unemployed were about 6.84 percent less likely to report good health status (Table AI). When we controlled for regional heterogeneities (e.g. culture, geography, etc.) by including the region-level fixed effects, this association increased to about 7.2 percent. Thus, our results confirm the findings of a large extant empirical literature that has shown that unemployment hurts human health (e.g. Forbes and McGregor, 1984; Gerdtham and Johannesson, 2003; Giatti et al., 2010; Blakely et al., 2003; Voss et al., 2004; Andres, 2005; Kuroki, 2010; Artazcoz et al., 2004; Gordo, 2006; Kaleta et al., 2008; Bambra and Elkemo, 2008; Drydakis, 2015; Reine et al., 2013). The $F$-statistics in the first stage regressions for Models 3 and 4 were 15.49 and 11.74, respectively, which were both higher than 10 (Stock and Yogo, 2004). In addition, the weak instrument-robust test by Finlay and Magnusson (2009) was rejected at the 10 percent level. Hence, we conclude that the instruments are valid.

A plausible and rather obvious explanation is lost income from being unemployed (Jin et al., 1995; Ehlert, 2012). In developed countries, social unemployment insurance attenuates the effect of unemployment on health (Jin et al., 1995). In Ghana, there is no scheme for unemployment benefits. Hence, being unemployed really leads to significant income losses. Lost income also means that the unemployed may utilize health care less frequently, which could then adversely affect their health (Kraut et al., 2002; Åhs and Westerling, 2006). In addition to income losses and increased indebtedness (Klasen and Woolard, 2009), perhaps, unemployment bereaves the unemployed of their social relationships that may be very important in their life (Junankar, 1991). By reducing their social capital and therefore leading to social exclusion (e.g. Kieselbach, 2003; Milner et al., 2013), it could be that unemployment negatively influences the health status of unemployed people (e.g. Kawachi et al., 1999; Yip et al., 2007). Moreover, unemployment may lead to stress, anxiety and depression for the unemployed (Smith, 1985a, b; Junankar, 1991; Kieselbach, 2003; Milner et al., 2013).

If unemployment is negatively correlated with good health in Ghana, are there gender differences in this relationship? To answer this question, we split the sample into female and male subsamples. We then reran separate probit and IV probit regressions for them. The results are reported in Models 5–8. We found that being unemployed is significantly and negatively correlated with reporting being in good health for only men. As shown in Models 5 and 7, the coefficient of unemployment for the female subsample was statistically insignificant. It was, however, statistically significant at the 1 and 5 percent levels for males in
Table II. Regression results for the association between unemployment and self-rated health in Ghana

<table>
<thead>
<tr>
<th></th>
<th>Probit Pooled sample</th>
<th>IV probit Pooled sample</th>
<th>Probit Female</th>
<th>Probit Male</th>
<th>IV probit Female</th>
<th>IV probit Male</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Model 1</td>
<td>Model 2</td>
<td>Model 3</td>
<td>Model 4</td>
<td>Model 5</td>
<td>Model 6</td>
</tr>
<tr>
<td>Unemployed</td>
<td>-0.3857*** (0.1118)</td>
<td>-0.4123*** (0.1138)</td>
<td>-0.6981* (0.3949)</td>
<td>-0.6730* (0.3993)</td>
<td>-0.1275 (1.503)</td>
<td>-0.9438*** (0.1888)</td>
</tr>
<tr>
<td>Age</td>
<td>-0.0266*** (0.0044)</td>
<td>-0.0236*** (0.0045)</td>
<td>-0.0232*** (0.0045)</td>
<td>-0.0241*** (0.0045)</td>
<td>-0.0251*** (0.0061)</td>
<td>-0.0139*** (0.0073)</td>
</tr>
<tr>
<td>Gender (ref. = male)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>-0.1838*** (0.0917)</td>
<td>-0.1884*** (0.0928)</td>
<td>-0.1630* (0.0953)</td>
<td>-0.1718* (0.0962)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Income scale</td>
<td>0.0922*** (0.0225)</td>
<td>0.0741*** (0.0230)</td>
<td>0.0556*** (0.0239)</td>
<td>0.0686*** (0.0245)</td>
<td>0.0844*** (0.0323)</td>
<td>0.0667 (0.0348)</td>
</tr>
<tr>
<td>Generalized trust</td>
<td>0.0194 (0.2013)</td>
<td>0.0444 (0.2067)</td>
<td>0.0153 (0.2013)</td>
<td>0.0393 (0.2066)</td>
<td>0.2799 (0.2959)</td>
<td>-0.2842 (0.3107)</td>
</tr>
<tr>
<td>Education (ref. = primary or less)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary</td>
<td>0.1065 (0.1009)</td>
<td>0.1210 (0.1019)</td>
<td>0.0933 (0.1024)</td>
<td>0.1099 (0.1033)</td>
<td>0.1175 (0.1422)</td>
<td>0.1264 (0.1563)</td>
</tr>
<tr>
<td>University</td>
<td>0.0531 (0.1678)</td>
<td>0.0116 (0.1709)</td>
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<td>-0.0866 (0.1603)</td>
<td>-0.1400 (0.1638)</td>
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<td>0.0061 (0.2009)</td>
<td>0.0042 (0.1970)</td>
<td>0.0051 (0.2114)</td>
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<td>0.2832* (0.1670)</td>
<td>0.3231** (0.1486)</td>
<td>0.2944* (0.1682)</td>
<td>0.2526 (0.2333)</td>
<td>0.2524 (0.2576)</td>
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<td>0.0471 (0.2306)</td>
<td>0.2273 (0.1823)</td>
<td>0.0574 (0.2315)</td>
<td>-0.0863 (0.3056)</td>
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<td>0.1357 (0.2308)</td>
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<td>Married</td>
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<td>0.0987 (0.1078)</td>
<td>0.1031 (0.1072)</td>
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<td>1.1945*** (0.3631)</td>
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<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
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<td>0.0893</td>
<td>0.0893</td>
<td>0.0893</td>
<td>0.0885</td>
<td>0.1379</td>
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<tr>
<td>LR χ²/Wald χ²</td>
<td>80.52***</td>
<td>97.65***</td>
<td>69.84***</td>
<td>83.06***</td>
<td>54.03***</td>
<td>65.59***</td>
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<td>Log likelihood</td>
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<td>-497.8529</td>
<td>-497.8529</td>
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Notes: Standard errors are in parentheses. *p < 0.10; **p < 0.05; ***p < 0.01
Models 6 and 8, respectively. As shown in Model 6a (Table A1), unemployed men were 13.38 percent less likely to report being in good health. This association increases to 26.68 percent when endogeneity is corrected for (Model 8a). Thus, while our results revealed a strong negative association between unemployment and self-rated health among Ghanaian men, we found no evidence for a negative association for Ghanaian women.

One possible explanation for the null relationship between unemployment and self-rated health for women may be due to compensatory factors (e.g., Stefansson, 1991). In addition, Ghana is a patriarchal society where men are preponderantly responsible for the provision of food, clothing and shelter for their families. Their inability to provide these due to unemployment and its concomitant income decline may result in “bitterness, shame, emptiness, waste” and a feeling of worthlessness or loss of dignity (Smith, 1985a, p. 1024). Consistent with this argument, Artazcoz et al. (2004) concluded that gender differences in the relationship between unemployment and health are due to family responsibilities and social class. Thus, it could be that men’s inability to provide for their family when unemployed negatively affects their health. Another explanation may be that men’s values tend to be more tied to their work, while women tend to prioritize their family and other aspects of their life (Virtanen et al., 2003). Unemployment also leads to alcoholism among Ghanaian men (Akyeampong, 1995), which has deleterious consequences for their health. While the debate on whether unemployment diminishes health more for men than for women remains unsettled, as Norström et al. (2014) noted, a larger number of the studies exploring this issue seem to conclude that the relationship is stronger for men than for women (e.g., Gordo, 2006; Kaleta et al., 2008; Bambra and Eikemo, 2008). Thus, our findings are consistent with the results of a previous and growing strand of the literature (e.g., Norström et al., 2014; Artazcoz et al., 2004; Drydakis, 2015; Reine et al., 2013).

Among the control variables, age, gender, income and ethnicity were significantly correlated with self-rated health. A year increase in age was negatively correlated with the likelihood of reporting good health by between 0.21 and 0.50 percent. This is consistent with the results of previous studies and is attributable to the idea that older people are usually at a higher risk of morbidity and mortality (e.g., Sung et al., 2006; Christensen et al., 2009). Consistent with Figure 1, our results also show that women were about 3.3 percent less likely than men to report being in good health. Among the ethnic group categories, Akans were between 4.85 and 5.64 percent less likely to report being in good health relative to people in the “other ethnic group” category, although there were no significant differences between this latter group on the one hand and Ga-Adangbe and Ewes on the other hand (see e.g. Addai and Adjei, 2014).

5. Summary and conclusion
A large extant literature examines the association between unemployment and self-rated health. The majority of these studies reveal that unemployment diminishes self-rated health. Another strand of this literature suggests that the relationship between unemployment and self-rated health is gendered. In this study, we examined two main issues. First, we examined whether unemployment is associated with self-rated health in Ghana. We found that unemployment is negatively correlated with self-rated health among Ghanaians as the unemployed are about 6.84–7.20 percent less likely to report good health status in a pooled sample. Second, we examined the genderedness of this relationship. After correcting for endogeneity, we found that unemployed men are about 26.68 percent less likely to report good health. However, we did not find evidence of a significant association between unemployment and self-rated health for unemployed women.

Our study contributes to a large empirical literature on the relationship between unemployment and health. While there are numerous studies on this topic for developed countries, studies on it are lacking for Africa. Therefore, we present empirical evidence on
the topic from a Ghanaian perspective. A policy implication is that since unemployment
hurts health in Ghana, policymakers ought to recognize that the non-pecuniary cost of
unemployment to both the individual and society may be higher than that which is usually
assumed (e.g. Schmitz, 2011). Therefore, every effort should be made to provide employment
opportunities to as many citizens who are willing and able to work as possible. This would
support the achievement of Goal 3 of the Sustainable Development Goals which seeks to
“ensure healthy lives and promoting well-being for all at all ages” (United Nations
Environment Programme, 2015). Nevertheless, our results should be interpreted with
cautions. The reason is that we have not established causation between unemployment and
self-rated health. Rather, our results have only shown conditional correlations.

Notes
1. Self-rated health, self-reported health and self-appraised health are used interchangeably in the
literature.
2. Six new regions have been created. However, our data set was based on eight of the ten regions at
the time of the surveys.
3. The surveys were not conducted in the Upper West and Upper East Regions. In addition, six new
regions have recently been created by the government.
4. Within the Ghanaian context, towns with at least 50,000 people are considered cities.
5. By gender, 10.7 percent of men were unemployed compared with 20.8 percent for women.

References
Åhs, A.M.H. and Westerling, R. (2006), “Health care utilization among persons who are unemployed or
Paulo, Brazil”, Revista Panamericana de Salud Pública, Vol. 17 Nos 5-6, pp. 333-341.
self-rated health in old age: a population-based, cross-sectional study using the international
analysis of employment durations for workers surveyed in the German socio-economic panel
of Public Health, Vol. 94 No. 1, pp. 82-88.
study of the relationship between unemployment and self-reported health in 23 European


Further reading


Corresponding author
Iddisah Sulemana can be contacted at: idsulemana@ug.edu.gh
<table>
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<td></td>
<td>Pooled sample</td>
<td>Model 2a</td>
<td>Pooled sample</td>
<td>Model 4a</td>
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<td>Model 6a</td>
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<td>-0.0325** (0.0168)</td>
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<td>-0.0329** (0.0167)</td>
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<td>0.0485* (0.0293)</td>
<td>0.0000 (0.0411)</td>
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<td>0.0070 (0.0424)</td>
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<td>0.0080 (0.0071)</td>
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Notes: Standard errors are in parentheses. *p < 0.10; **p < 0.05; ***p < 0.01