



Food Insecurity and Suicidal Tendencies: Comparative Study between Employed and Unemployed Graduates in the Greater Accra Region, Ghana

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Authors' contributions

This work was carried out in collaboration between all authors. Author PA designed the study, performed the statistical analysis, wrote the protocol, and wrote the first draft of the manuscript. Authors INO and DNT managed the analyses of the study. Author WAB managed the literature searches. All authors read and approved the final manuscript.

Article Information

DOI: 10.9734/JESBS/2018/38943

Editor(s):

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Complete Peer review History: <http://www.sciencedomain.org/review-history/23100>

Original Research Article

Received 21st November 2017

Accepted 26th January 2018

Published 9th February 2018

ABSTRACT

The high rate of graduate unemployment in Ghana has become a thorny issue that calls for remedial measures because of the psychosocial consequences it comes with. This study compared the differences in food insecurity and suicidal tendencies between employed and unemployed graduates in the Greater Accra Region, Ghana. The impact of years of unemployment on suicidal tendencies and food insecurity was also examined. One hundred and sixty (160) graduates in the

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Greater Accra Region, Ghana were conveniently selected to complete the Multi-Attitude Suicide Tendency Scale and the Household Food Security Scale. The MANOVA and the Pearson r were used for data analysis. Results indicated higher levels of food insecurity and suicidal tendencies among unemployed graduates compared to employed graduates. There was a definite relationship between food insecurity and suicidal tendencies as well as years of unemployment and suicidal tendencies. There was, however, no significant relationship between years of unemployment and food insecurity. To this end, there is the need to seek an immediate solution to graduate unemployment since it is associated with high public health issues such as food insecurity and suicidal tendencies.

Keywords: Food insecurity; suicidal tendencies; unemployed; employed; graduates.

1. INTRODUCTION

Unemployment is acknowledged as one of the most challenging social problems facing the world currently. High level of unemployment is now an established feature of the world with the youth most affected [1]. The economic and health consequences of unemployment have been well studied since the escalating rate of unemployment over the past two decades. However, researchers have not concentrated much on the psychological consequences of graduate unemployment [2]. Unemployment is associated with psychosocial consequences such as food insecurity and suicidal ideation. The lack of purchasing power among the unemployed leads to food insecurity and dysfunctional thoughts such as suicidal tendencies [2,3].

In Ghana, the right to work is both a constitutional and a fundamental human right. Article 24 (1) of Ghana's 1992 Constitution defines the right to work as an economic right by stating that "Every person has the right to work". It is even obligatory for the government to report annually, the realisation of the right to work as indicated in Article 34 (2) of Ghana's Constitution [2]. This right to work, however, is gradually becoming very difficult for both government and individuals to realise [3]. Today, unemployment seems to probably be the single most pressing challenge for Ghanaians [2].

There are many interventions put in place by previous governments of Ghana to minimise unemployment to fulfil the right to work. One of the significant interventions that previous governments has put in place to reduce unemployment is the provision of higher quality education [3]. It is an undeniable fact that education is one of the means to fulfil the right to work. Education has long been recognised as the means to achieving change. Education helps in creating new ideas and initiative that move a

country towards increasing prosperity [4,5]. Higher education also serves as the means of securing attractive job. Due to the significance associated with education, parents ignore all the opportunity costs in educating their children with the scarce resources at their disposal with the hope that education will open the gates of employment into attractive jobs for their children [1]. The tremendous effort devoted to education seems to be futile because of the large chunk of graduates who are jobless [4]. Considering the number of resources invested in education by both public and private individuals, the focus on graduate unemployment is a very important issue to consider [6].

The reality on the job market in Ghana has sent many graduates back to school and the rest wandering the streets and various offices in the urban centers in search of apparently unavailable jobs [7]. The number of graduates seeking for jobs far exceeds the available job opportunities. The number of graduates every year has far outgrown the labour demand [7] making most of the graduates roam about aimlessly in search of unavailable jobs and lamenting about the worth of obtaining a degree or diploma. This has created many sustained graduate unemployment rates over the past two decades [7]. Sustained unemployment among graduates is a humiliating experience, taking a severe mental and financial toll on them, creating thoughts about how to start career life among others. The failure of many graduates to get hold of how to start their career life results in numerous psychological problems [1].

Numerous studies have been conducted to assess the consequences of unemployment. However, these studies [e.g. 2,8,9] have neglected food insecurity as one of the significant repercussions of unemployment [3]. According to [3], one major problem confronting unemployed youth is the absence of food security. Food

security has to do with the assured access of all people to enough food for a healthy and active life. Food security to a large extent is determined by the financial strength of an individual [10]. Unemployed graduates have lower financial strength because of the unavailability of any reliable source of income. The lack of purchasing power due to unavailable source of income exposes people to food insecurity [3].

Aside food insecurity, graduate unemployment also results in suicidal tendencies. Suicidal tendencies deal with thoughts of unusual preoccupation with suicide [11]. This varies from imagination to proper planning, which can fail or be successful or lead to death [11]. Unemployed graduates engage in unusual thoughts of death because they are unable to earn money to meet their financial obligations. Unemployment is also associated with increased susceptibility to mental stress, lower well-being and loss of self-esteem which can influence individuals to engage in an unusual thought of death [12]. The high food insecurity associated with unemployment also causes the unemployed graduate to go through several psychological problems such as stress, depression and anxiety which exposes people to higher level of suicidal tendencies [13].

Undoubtedly, unemployment is a risk factor that exposes people to negative consequences such as food insecurity, suicidal tendencies, depression, anxiety etc [12]. As explained by the Hopelessness Theory of Depression [14], individuals are vulnerable to depression which propels them to think negatively when they encounter adverse life events such as unemployment and have no hope of getting out of the event. When individuals experience hopeless depression, they exhibit symptoms such as sad affect, suicidality, lack of energy, apathy, sleep disturbance, low self-esteem, and difficulty in concentration [14]. These negative traits prevent individuals from engaging in positive thoughts and in productive activities that will ensure food security.

According to the Interpersonal-Psychological Theory of Suicidal Behaviour [15], when people hold two specific psychological states in their minds simultaneously for an extended period, they develop the desire for death. Perceived burdensomeness and a sense of low belongingness are the two mental states. Perceived burdensomeness is the view that one's existence burdens family, friends, and society. Unemployed graduates have the

perception that they are worth nothing and are burdensome to others. Their inability to orient with others in organisations and job market also lead to a low sense of belongingness. This affects them and leads to the development of suicidal tendencies.

2. LITERATURE REVIEW

Studies [e.g., 8,16] have indicated that unemployment is associated with higher suicidal tendencies and food insecurity among individuals. In a study conducted by [2] on the psychological effects of youth unemployment in Ghana, the findings indicated that unemployment was associated with higher psychological effects such as suicidal ideations among the youth. The duration of unemployment was also found to significantly predict higher levels of suicidal ideation. [9] revealed that the longer the years of unemployment, the higher the level of suicidal tendencies.

A study was also conducted by [17] to assess the impact of unemployment on suicidal ideation and attempted suicide among the youth in New Zealand. The findings indicated that unemployment was associated with increased risks of suicidal ideation and number of attempted suicide. Similarly, [18] compiled some data on completed suicides and unemployment rates in Hungary for the years 2000–2011. The findings indicated that increase in unemployment rate was associated with increase in suicidality. As unemployment rate decreases, the rate of suicidality also decreased.

Taborda [19] indicated that unemployed people have higher food insecurity compared to employed people. As indicated by [20], the higher the unemployment rate, the lower household incomes will be and the higher the levels of food insecurity. A study by [21] also showed higher levels of food insecurity among unemployed youth compared to employed youth. However, the duration of unemployment did not determine the level of food insecurity.

Dodd and Nyabvudzi [3] explored the role of unemployment and living wages on household food insecurity among South Africans. Four hundred and forty one (441) respondents took part in the study. The results of the study revealed a negative impact of unemployment on food insecurity with higher unemployment associated with higher levels of food insecurity. Lower living wages was also associated with

higher levels of food insecurity among participants. Similarly, [22] revealed that individuals with secured living wages have higher level of food security compared to those with unsecured living wages.

The literature has also shown positive relationship between food insecurity and suicidal tendencies [23]. [24] examined the relationship between food insecurity and suicidal ideation among Canadians. The study involved 5,270 participants who were 18 years and above. The findings indicated a positive relationship between food insecurity and suicidal ideation. [25] also conducted a cross-sectional study to examine the relationship between food insecurity and four common mental health problems (depression, suicidal ideation, inattentiveness and substance abuse) among young adults in France. The results indicated a positive relationship between food insecurity depression, suicidal ideation and substance abuse.

Assessing the literature reviewed above, not much has been done in the Ghanaian community. Since much attention has not been devoted to the influence of graduate unemployment on food insecurity and suicidal tendencies in Ghana, this study sought to compare the differences in food insecurity and suicidal tendencies between employed and unemployed graduates using residents of Greater Accra Region, Ghana. The study also examines the relationship between food insecurity and suicidal tendencies. Moreover, the study assessed whether years of unemployment is in any way related to food insecurity and suicidal tendencies.

Accordingly, the following predictions are tested

1. Unemployed graduates will have significantly higher levels of food insecurity and suicidal tendencies than employed graduates.
2. There will be a significant positive relationship between food insecurity and suicidal tendencies among graduates
3. Years of unemployment will have significant positive relationship with food insecurity and suicidal tendencies.

3. METHODOLOGY

3.1 Population

The population for this study consisted of graduates (employed and unemployed) in the Greater Accra Region of Ghana. The Greater

Accra Region is the smallest of the 10 administrative regions in terms of area, occupying a total land surface of 3,245 square kilometers or 1.4 per cent of the total land area of Ghana. Greater Accra was used because it is one of the industrialized cities in Ghana where graduates from almost all the different ethnic groups reside due to migration. The migration has created high unemployment rate among the graduates. Moreover, most of the tertiary schools are found in the Greater Accra Region. Graduates therefore do not move back to their hometowns after school thus creating high problems for the limited industries to employ all of them. This has increased unemployment among graduates in Accra as compared to the other regions [2].

3.2 Sample/Sampling Technique

The convenience sampling technique was used to select a total of one hundred and sixty (160) participants consisting of eighty (80) employed and eighty (80) unemployed graduates for the study. The convenience sampling technique was used because only participants who were readily available and willing to participate in the study were selected.

3.3 Design

The cross-sectional survey design was used. A five-step process for conducting cross-sectional survey research proposed by [26] was adhered to in this study. This process consists of defining the purpose and objectives, deciding on the sample, creating the instrument, contacting the respondents, and collecting and analyzing data. The design is cross-sectional because data was collected from graduates with diverse backgrounds across different parts of the Greater Accra region. The design was deemed appropriate because it is quantifiable with numerous amount of information collected in a short period of time [26].

3.4 Measures

The Multi-Attitude Suicide Tendency Scale (MAST) [27] and the Household Food Security Scale (HFSS) [28] were used to collect data on suicidal ideations and food insecurity respectively.

The MAST is a 20-item theory-based instrument designated to assess the tendency towards repulsion of life and death [27]. The MAST consists of four subscales, including Repulsion

by Life (MAST-RL), Attraction of Life (MAST-AL), Repulsion by Death (MAST-RD), and Attraction by Death (MAST-AD). Repulsion by Life (MAST-RL) reflects individual experiences with psychological pain and stress. Attraction to Life (MAST-AL) reflects a willing to live, which is based on the degree of life satisfaction. Repulsion to Death (MAST-RD) reflects fear of death and attraction to Death (MAST-AD) reflects a religious belief that death is superior compared to life. Each of the 20 items is measured on a four-point Likert scale ranging from 0 (Strongly Disagree), 1 (Disagree), 2 (Agree) and 3 (Strongly Agree). Respondents were asked to select only one of the four responses. Many researchers have applied the MAST to different groups, especially to group of students from different countries or cultural backgrounds, and obtained a number of data to inspect its reliability and validity varying from .82 – .97 [29,30]. Total scores ranged from 0 to 60. A sample of an item on the MAST is “life seems to be one long and difficult struggle”.

The HFSS is an 18-item food security scale (HFSS) that measures household food security status within the previous 12 months [28]. The questions measured four underlying conditions in the households: anxiety about the food supply, perceptions about the adequacy of the quantity and quality of the food, adult's reduction in food intake and children's reduction in food intake. Results of the study conducted in many different countries such as Burkina Faso, Bolivia, Ghana, and the Philippines indicated that the HFSS is valid and reliable and can be applied successfully to different developing and developed countries' contexts. However, according to [31], similarities of the scale can only be adduced on four underlying domains of food insecurity (access) represented by nine (9) questions that appear to be universal across different countries and cultures. The four underlying domains are anxiety and uncertainty

about the household food supply, insufficient food quality, insufficient food intake, and its physical consequences. Each of the 9 universal items is measured on a three-point likert scale ranging from 1 (Rarely), 2 (Sometimes) and 3 (Often). The nine items found to be universal with a Cronbach alpha of .89 [31] was used in this study. Total scores ranged from 9 to 27. An item on the HFSS is “I have been worried that food would run out before more could be obtained”

3.5 Procedure for Data Collection

Different methods of administering questionnaires are open to researchers. Questionnaires can be administered through postal mail, telephone interviews, internet or self-administration [32]. The questionnaires in this study were administered to the participants using self-administration. The administration of the questionnaires was done by all the researchers after seeking for their written consent. The participants were made to fill the questionnaire in their offices, vicinities and house of residents. The purpose of the study was first explained to the participants before administering the questionnaires to them. Participants took approximately 45 minutes to complete the questionnaire.

4. DATA PRESENTATION, ANALYSIS AND DISCUSSION

4.1 Demographic Characteristics

There were more male (98) than female (62) participants in the study. The age range of the participants was from 24 to 39 years with a mean age of 27.35. The respondents were all Polytechnic and University graduates (See Table 1 for description of the demographic characteristics).

Table 1. Demographic distribution of respondents

Demographic variables	Employed (n = 80)	Unemployed (n = 80)	Total (n = 160)
Age	Mean (SD)	Mean (SD)	Mean (SD)
	28.31 (3.24)	26.39 (5.33)	27.35 (4.29)
Gender			
<i>Males</i>	37	61	98
<i>Females</i>	42	20	62
Academic levels			
<i>University</i>	57	65	122
<i>Polytechnic</i>	23	15	38

Source: researchers field data

4.2 Data Analysis

The study focused on testing four hypotheses using the version 20 of the Statistical Package for Social Science. Inferential statistics (Pearson Product-Moment Correlation Coefficient and Independent t-test) were used for analyzing the hypotheses. The first hypothesis (Unemployed graduates will have significantly higher level of food insecurity and suicidal tendencies than employed graduates) was analyzed using the Multivariate Analysis of variance (see Table 2). This is because the hypothesis sought to discover the effect of one independent variable that is employment status on more than one dependent variable (food insecurity and suicidal tendencies). The dependent variables (food insecurity and suicidal tendencies) were all measured on an interval scale. The second, third and fourth hypotheses (there will be a significant positive relationship between food insecurity and suicidal tendencies among graduates, years of unemployment will have significant positive relationship with food insecurity and years of unemployment will have significant positive relationship with suicidal tendencies) were analyzed using the Pearson Product Moment Correlation Coefficient (Table 3) because the relationship between variables were established with each of the variable measured on an interval scale.

The results presented in Table 2 show a significant impact of graduate employment status on food insecurity ($F_{(1, 178)} = 163.125, p < .01$) and suicidal tendencies ($F_{(1, 178)} = 60.033, p < .01$). This means that unemployed graduates have a significantly higher level of food insecurity ($M=22.38, SD=4.28$) and suicidal tendencies ($M=30.57, SD=13.10$) than employed graduates in terms of level of food insecurity ($M=28.49,$

$SD=7.34$) and suicidal tendencies ($M=68.07, SD=7.56$). The first hypothesis that “unemployed graduates will have higher level of food insecurity and suicidal tendencies than employed graduates” is therefore supported.

The results shown in Table 3 indicate a significant positive relationship between food insecurity and suicidal tendencies [$r = .529, p < .01$]. This means that an increase in level of food insecurity is associated with an increase in suicidal tendencies thus supporting the second prediction that there will be a significant positive relationship between food insecurity and suicidal tendencies among graduates.

Similarly, a significant positive relationship was found between years of unemployment and suicidal tendencies ($r = .413, p < .01$). However, no significant relationship was found between years of unemployment and food insecurity ($r = .050, p = ns$) (see Table 3). This means that an increase in years of unemployment is associated with an increase in suicidal tendencies but has no influence on food insecurity. This stands to reason that, the third prediction that years of unemployment will have significant positive relationship with food insecurity was not supported but the fourth hypothesis that years of unemployment will have significant positive relationship with suicidal tendencies was supported.

4.3 Discussion

One of the findings of the study revealed a significant impact of graduate employment status on food insecurity and suicidal tendencies with unemployed graduates having a higher level of food insecurity and suicidal tendencies compared to employed graduates. The prediction that

Table 2. Graduate employment status on food insecurity and suicidal tendencies

Variable	Employed graduates $n=80$ Mean (SD)	Unemployed graduates $n=80$ Mean (SD)	F	df	P
Food insecurity	14.43 (3.55)	22.38 (4.28)	163.125	178	.000**
Suicidal tendencies	17.97 (6.30)	30.57 (13.10)	60.033	178	.000**

** $p < 0.01$

Table 3. Relationship between years of unemployment, suicidal tendencies and food insecurity

Variable	1	2	3
1. Years of unemployment	-	-	-
2. Food insecurity	.050	-	-
3. Suicidal tendencies	.413**	.529**	-

** $p < .01$

“unemployed graduates will have significantly higher level of food insecurity and suicidal tendencies than employed graduates” was supported. This finding suggests that unemployment predisposes graduates to higher level of food insecurity and suicidal tendencies.

The higher level of suicidal ideation among unemployed graduates compared to the employed graduates is congruent with previous findings revealed by [9] which indicated a significantly higher level of suicidal tendencies among unemployed graduates compared to employed graduates. Similarly, the low level of suicidal ideation among employed participants compared to unemployed participants agrees with the study by [2]. According to [2], the unemployed tend to have lower levels of psychological wellbeing including depression, anxiety, and distorted thinking, as well as higher levels of suicidal ideation. Longitudinal study by [18] revealed that higher levels of suicidal ideation are as a result of unemployment.

The higher level of suicidal ideation among the unemployed graduates compared to the employed graduates is because unemployment confers vulnerability by increasing the impact of stressful life events. Unemployment also causes exclusion from ordinary living patterns and activities which adds up to the ordinary stress and increases the risk of depression and suicidal tendencies. According to the Interpersonal-Psychological Theory of Suicidal Behavior [15], perceived burdensomeness and a sense of low belongingness are the two psychological states that develop the desire for death. Because unemployment is associated with higher burden on family and lower sense of belongingness among graduates, it results in the development of suicidal tendencies.

The higher level of food insecurity among unemployed graduates compared to the employed graduates also corroborates earlier studies that indicated that unemployment is associated with higher level of food insecurity [19,22]. Similarly, [3] observed that the unemployed tend to experience higher level of food insecurity compared to the employed. [2] proffered that living wages determine the level of food insecurity and because unemployed people do not have stable living wages, they fall victims to higher level of food insecurity. As indicated by [20], the higher the unemployment rate, the lower the household

incomes may be and subsequently the higher the levels of food insecurity.

The study also found a significantly positive relationship between food insecurity and suicidal tendencies. This supports the prediction that there will be a significant positive relationship between food insecurity and suicidal tendencies among graduates. This finding implies that an increase in food insecurity is associated with an increase in suicidal tendencies. The finding corresponds with the study of [24] which indicated a significant positive relationship between food insecurity and suicidal tendencies among graduates. This finding again agrees with the study by [25] which found higher food insecurity to be associated with high suicidal tendencies. [25] explained that the stress and depression associated with food insecurity propels people to think that life is not worthwhile.

What is more, the finding of the study indicated a significantly positive relationship between length of unemployment and suicidal tendencies. This supports the prediction that there will be a significantly positive relationship between the length of unemployment and suicidal tendencies. This means the longer the years of unemployment, the higher the level of suicidal tendencies. The significantly positive relationship between length of unemployment and suicidal tendencies is in agreement with the study by [9] which revealed that the longer the years of unemployment, the higher the level of suicidal tendencies. The finding is also in line with [2] study which indicated a positive relationship between length of unemployment and suicidal ideation. As explained by [18] length of unemployment is positively related to depression and dysfunctional thoughts. The more one develops depression and distorted thinking, the higher the possibility of developing suicidal ideation. Similarly, [16] discovered that the tendency of developing irrational thoughts such as suicidal ideation depends on the extent to which something unpleasant keeps on repeating itself. This means the tendency of developing suicidal thoughts could equally depend on the length of time of unemployment.

Finally, the study found no significant relationship between length of unemployment and perceived food insecurity. This goes to show that the level of food insecurity associated with unemployment does not depend on the number of years one has been unemployed. This did not support the researchers' prediction that there will be a

significantly positive relationship between the length of unemployment and food insecurity. The non significant relationship between length of unemployment and food insecurity is in agreement with the study by [21] which indicated that the duration of unemployment has no significant influence on food insecurity. A possible explanation one can offer with respect to the lack of a significant relationship between years of unemployment and food insecurity among unemployed graduates is because of the dependency issue in Africa. Many graduates due to unemployment are depending on few persons in the working population and this affects the purchasing power of their incomes irrespective of the years of unemployment. Graduates who have been unemployed for both short and long period do not have any alternative source of income to purchase enough food aside the dependence in the few working persons. This makes all unemployed graduates experience food insecurity irrespective of the number of years of unemployment.

4.4 Limitation

The study like all other studies has some limitations that need to be addressed. First, it must be noted that this study is a survey that sought to establish relationship through self-report measures. The conclusions drawn in this study therefore are largely correlational and descriptive. Causal relationships cannot be established through this study. Secondly, because selection of participants was based on the convenience non-probability technique, generalizing the findings to the larger population of graduates becomes questionable.

In spite of the limitations, there are a number of implications that can be inferred from the study. The findings of the study imply that unemployment is associated with higher levels of food insecurity and suicidal tendencies. The findings also provide additional evidence that sustained unemployment over a long period may lead to higher suicidal tendencies. Moreover, the inaccessibility of enough food leads to higher suicidal tendencies.

5. CONCLUSION AND RECOMMENDATION

The findings of this study have established that unemployed graduates experience higher food insecurity and suicidal tendencies compared to

employed graduates. A positive relationship was found between food insecurity and suicidal tendencies. There was a significantly positive relationship between a length of unemployment and suicidal tendencies. However, no significant relationship was found between duration of unemployment and food insecurity. The psychological strains associated with food insecurity also propel individuals to have suicidal tendencies. The lack of significant relationship between years of unemployment and food insecurity suggests that irrespective of years of unemployment, there is difficulty in attaining adequate access to food due to lack of purchasing power.

Based on the higher level of suicidal tendencies and food insecurity among unemployed graduates compared to the employed graduates, the researchers recommend the need for the government, private organisations and all stakeholders to find ways of providing jobs for graduates to be able to get a reliable source of income. There is the need for graduate empowerment programs that will make the unemployed graduates express their capabilities and reduce restlessness. Again, graduates must be empowered through life skills activities and visible policies that may lead to the provision of employment opportunities as means of generating income. Unemployed graduates must also be given psychological interventions to be able to endure the hardships they are encountering. In doing this, graduates who have been unemployed for a long time must be targeted. Finally, future research should continue to assess the impact of unemployment on suicidal tendencies and food insecurity: In doing so, the following recommendation must be considered:

From the study, there is the need to expand the definition of employment since some graduates are employed, but their jobs and salaries do not correspond with their qualifications and are also not satisfied with their jobs (underemployment) [33]. Future researchers should, therefore, compare the level of food insecurity among the unemployed, underemployed, and the adequately employed. Second, next researchers must also compare the differences in suicidal tendencies and food insecurities among graduates with degrees and those with diplomas because of the different expectations associated with university and polytechnic graduates. Lastly, there is the need for future researchers to assess some of the factors that can buffer the negative

impact of unemployment on graduates to be able to provide adequate psychological interventions.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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