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Influence of social support, age and gender on depressive symptoms among cancer patients

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ABSTRACT

The study examined the influence of social support, age and gender on depressive symptoms among cancer patients in a sample of one hundred and seventy four (174) adult participants. Participants' responses from the Social Provision Scale (SPS) and the Centre for Epidemiological Studies-Depression Scale (CES-D) were used in measuring social support and depressive symptoms respectively. Multiple Regression was used to test the hypotheses. The results of the analysis show that social support was a significant negative predictor of depressive symptoms. Similarly, age was a significant negative predictor of depressive symptoms. In addition, findings showed that gender was not a significant predictor of depressive symptoms. Discussion highlights the importance of psychosocial support in the management of depression in cancer patients.

General medical conditions have been observed to be greatly affected by psychological factors. Individuals who have life threatening illnesses face a lot of challenges to their existence, and this may include depression. Essentially, depression appears to be an important aspect of mental health. Many factors influence whether one develops depression or not. Individuals who were diagnosed of medical conditions such as cancer were shown to be experiencing psychiatric symptoms such as depression (Nakash, Levav & Scott, 2014; Anuk, Özkan, Kizir, & Özkan, 2019; Roy-Byrne, 2019; Rivest & Levenson, 2018). Consequently, this research is aimed at examining some variables that may influence cancer patients' mental health, with particular reference to depression. Cancer has been identified as one of the insidious physical diseases that often threaten human life (Pizzoli, Renzi, Arnaboldi, Russell-Edu, & Pravettoni, 2019). It is one of the prevalent medical conditions found in many cultures, including Nigeria (Yerima, Olasinde, & Olurishe, 2007). This disease is a chronic, progressive and life-threatening disease, which brings a lot of difficult symptoms, including pain, dyspnea, fatigue, and loss of mobility (Yerima et al., 2007). This disease is generally accompanied by depression, anxiety, and a sense of despair (Akhigbe, 2011; Fine, 2005).

Ordinarily, depression has been shown to be a part of normal experience. People generally feel unhappy at times of adversity. The symptom of depressed mood is a component of many psychiatric syndromes and is also commonly found in certain physical diseases, for example, in infections such as hepatitis and some neurological disorders (Gelder, Harrison, & Cowen, 2006). Theories have been propounded to explain the aetiology of depression. They include biological, psychological and socio-cultural theories. In particular, social factors such as interpersonal or social skills have been used to explain the aetiology of depression (e.g., Wu, 1991; Dirksen, 2000; Helgeson, Cohen, Schultz, & Yasko, 2000; Uchino, 2004). Holmes and Rahe (1967) stated that when an organism must make a substantial adjustment to the environment, the likelihood of stress is high. They also established that all people experience

different degree of stressful events; some will experience high degree of stress; it is this group of people that is most vulnerable to depression. Generally, patients with depressive symptoms usually report the following symptoms when in a depressive episode: change in appetite, loss of interest and enjoyment, problem in thinking, concentrating, or making decisions; trouble sleeping or sleeping too much; loss of energy or fatigue; recurrent thoughts of death and suicide (American Psychiatric Association, APA, 2000).

Moreover, researchers have traced the association between social support and mental illnesses such as anxiety, depression and drug abuse (Davis, Morris, & Kraus, 1998). Social support has been shown to be a key factor that determines people's level of physical and mental health (Lockenhoff & Carstensen, 2004). Another study has reported that social relationship is an essential ingredient for emotional, physical health and well-being (Caccioppo & Hawkey, 2003). In other studies (e.g., Naseri & Taleghani, 2018; Yoo et al., 2017), it was observed that positive association of higher perceived social support leads to lower depressive symptoms, as well as results to higher health-related quality of life. In another study, it has been shown that people who lack social support are more vulnerable to becoming depressed and that depressed individuals have smaller or less supportive network (Brown, Nesse, Vinokur, & Smith, 2003; Gotlib, 1992; Hammen & Peters, 1978). Tel, Sari and Aydin (2013) observed that single patients who had lower family support, lower significant others support and lower total social support were thought to recover from the disease than patients who had lower depression; and that those who got support from only health care personnel had lower family support but higher depression. This observation suggests an evidence of close correlation between social support and depression of the patients.

Other studies have found link between deficiencies in social networks and person's functioning (e.g., Segrin, Powell, Givertz, & Brackin, 2003; Segrin, 2001). They noted, for example, that people who are isolated and lack social support

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or intimacy in their lives are more likely to have mental illness when under stress and to remain mentally ill than are people with supportive spouses or warm friendships. In confirmation of this observation, a previous study demonstrated positive correlations between high social support and greater immune functioning (Uchino, Uno, & Holt-Lunstad, 1999). An empirical evidence in the study of 86 African-American women with a diagnosis of breast cancer living in the Southern United States, indicated that positive reappraisal and seeking social support are the most commonly used in coping strategies among them (Henderson, Fogel, & Edwards, 2003). Evidence from some of the recent similar studies, established that support from family members have been shown to reduce depression in cancer patients (e.g., Jeong & An, 2017; Wondimagegnehu, Abebe, Abraha, & Teferra, 2019). Wondimagegnehu et al. (2019) concluded that one in four breast cancer patients had depression, and that depression is associated with poor social support given by family, friends, and significant others.

Another variable of interest in this study is age. Though literature on the influence of age on depression were scarce, but recent empirical evidence has shown that age is associated with depressive symptoms (e.g., Liu et al., 2018). Researchers that use the standard diagnostic criteria have indicated that aging decreases the tendency of developing depressive symptoms (Chiao, Weng, & Botticello, 2011). Similarly, researchers on depression and age from various locations have reported that the prevalence of depressive disorders decline in late life (Blazer, Hughes, & George, 1987; Eaton, Kramer, Anthony, Dryman, Shapiro, & Locke, 1989; Weissman, Leaf, Tischler, Blazer, Karno, Bruce, & Florio, 1988).

It has been indicated that cognitive theories of depression, combined with an appreciation of the diminution of physical abilities with advanced age, suggest that feelings of hopelessness and helplessness play a more central role in elderly persons than for younger persons (Depue & Monroe, 1978; Abramson, Metalsky, & Alloy, 1989). Romanoski et al. (1992) observed that as a result of standardized clinical examinations, whereas prevalence of DSM-III Major Depressive Disorder declined with age, prevalence of all other DSM-III depressive disorders increased with age, even after adjustment for socio-demographic variables and recent life events. Afolabi, Abioye-Kuteyi, Fatoye, Bello, & Adewuya (2008) found that depression was more common in the age groups from 45 years and above than in younger groups, showing a significant association between age and depression.

Further, researchers in the area of age and depression have shown that there are age differences in symptom endorsement between younger/middle aged and older patients with major depression (Hybels, Landerman, & Blazer, 2012). Older adults with depression have been observed to be visiting the doctor and emergency room often, use more medication, incur high outpatient charges, and stay longer in the hospital (U. S. Department of Health & Human Services, 1999). In a study, it has been shown that 67% of depressed patients over 65 years old were well at 4-years follow-up, compared to only 40% in the younger group, in part because of differences in remission rate (Wesson, Wilkinson, Anderson, & McCracken, 1997). Contrarily, O'Connor and colleagues (2001) observed that there is no significant difference between the elderly and middle-aged groups, the younger patients had an inferior response to depression. It is important to note that the younger group also had significantly greater number of previous episodes of depression, a likely confounder that was not adjusted for. Current evidence in literature suggests that the influence of age in depression is not yet clear.

The third variable of interest in this study is gender. World Health Organization (2016) has demonstrated that

depression accounts for 10% of the global nonfatal disease burden worldwide. Consequently, this burden falls disproportionately on female gender. In the recent estimates of the global 12-month prevalence of major depressive disorder, studies (e.g., Ferrari et al., 2013) reported that 5.8% were in women, while 3.5% were in men. Therefore, gender difference in depression is generally believed to be double in women who are experiencing major depression as men, and this also represents a major health disparity.

Moreover, numerous gender studies (e.g., Asim et al., 2019; Immanuel, Odo, Chukwuma, & Nzenweaku, 2015; Martin, Neighbors, & Griffith, 2013; Music, Erjavec, Poljicanin, Vrabec, & Brecic, 2015; Ryba & Hopko, 2011) have been conducted with regards to depression in the past. It was noted that female gender is a potential predisposing factor influencing the vulnerability of depression (e.g., Asim et al., 2019). However, focusing on the lifespan distribution of depression makes sense when it accounts for gender specific developmental details, and when it combines the effect of gender and age on depressive symptoms. Similar study (e.g., Ryba & Hopko, 2011) found that gender had a significant direct effect on depression severity, with females reporting increased depression. This effect was influenced by the mediator (total environmental reward) such that to the extent that females exhibited increased environmental reward, the gender effect was influenced.

Gender differences in rates of depression are well established and seen in both epidemiological and treatment-seeking samples (Bebbington, 1996; Nolen-Hoeksema, 1990). Gender difference in severity, symptom prevalence and comorbidity have received less attention, particularly since it may be difficult to have a large enough sample of cases to evaluate these parameters (Frank, Carpenter & Kupfer, 1988). In two meta-analyses on gender differences in depression in nationally representative samples, researchers (e.g., Salk, Hyde & Abramson, 2017) reported that larger gender differences were found in nations with greater gender equity, for major depression, but not depression symptoms. The study further concluded that the gender differences in depression represents a health disparity, especially in adolescence, yet the magnitude of the difference indicate that depression in men should not be overlooked.

Other studies have reported that gender differences are noticeable in prevalence rates of certain mental health issues. Female gender is associated with internalizing disorders such as depression and anxiety (Nolen-Hoeksema, 2001; Nolen-Hoeksema & Hilt, 2009), while male gender has a higher prevalence of several externalizing disorders such as substance abuse and antisocial personality disorder (Rosenfeld, 2000). Other studies (e.g., Galambos, Leadbeater & Barker, 2004; Kessler et al., 2003) found that pertaining to gender differences in depression, beginning in late adolescence, and continuing through adulthood, it is widely established that depression is more common among females (21%) than males (13%).

Some other studies (e.g., Nolen-Hoeksema & Hilt, 2009; Freeman et al., 2004; Steiner, Dunn, & Born, 2003) have found that many factors may account for this gender differences including biological influences such as genetics, hormones, adrenal functioning, and neurotransmitter systems, as well as psychosocial variables such as more frequent victimization and trauma in childhood, gender role factors (e.g., competing social roles, role restrictions), interpersonal orientation such as increased vulnerability to the emotional pain of others, being more prone to rumination, differential attribution styles, and greater reactivity to stress in terms of biological responses, self-concept, and coping styles. Other studies (e.g., Marcus, Keber, & Trivedi, 2008) reported that most of the clinical features and comorbidities were found to be more prevalent in the first cohort of women. This analysis, therefore corroborated previous research

suggesting higher rates of atypical and anxious depression in women but refuted the notion of an irritable depression found in men. A study (e.g., Gigantesco et al., 2019) reported contrarily that satisfaction with life and depressive symptoms could belong to highly related dimensions, at least among female individuals.

Contrary to some previous findings, studies (e.g., Hildebrandt, Stage, & Kragh-Soerensen, 2003; Immanuel et al., 2015) found that the symptoms of depression are similar between men and women, that there were no gender differences in depressive symptoms. This study hypothesized that social support will have significant influence on depression, however, age and gender will not have significant influence on depressive symptoms in patients grappling with cancer.

Method

Participants

Participants for the study were one hundred and seventy-four (174) adult cancer patients from four (4) hospitals in the South Eastern part of Nigeria. The researcher selected the hospitals for the study because cancer patients periodically cluster there for treatment or check-up. The participants were selected using cluster sampling method. The participants were already diagnosed cancer patients in each of the hospitals, who were both in-patients and out-patients that attended their clinic in the hospitals. Their ages ranged from 17 to 75 years ($M = 44$; $SD = 14.11$), gender (82 men and 92 women), marital status (53 single and 112 married), and occupation (33 public servants, 90 employed in private sector, and 42 others).

Instruments

Two instruments were used for data collection in the study. They include: Social Provision Scale and Centre for Epidemiological Studies-Depression Scale.

The Social Provisions Scale (SPS) is a standardized psychological inventory developed by Cutrona and Russel (1987). It contains 24 items designed to assess perceived social support. Items were scored on a 4-point likert format as follows: 4 = strongly agree, 3 = agree, 2 = disagree, 1 = strongly disagree. It has 6 subscales, they include: attachment, social integration, reassurance of worth, reliable alliance, guidance, and opportunity for nurturance subscales. For scoring purposes, items: 2, 3, 6, 9, 10, 14, 15, 18, 19, 21, 22, 24 were reversely scored to obtain consistency of scoring, to categorize social support into high and low, the score of 67 or below indicates low social support. Cutrona and Russell (1987) reported test-retest reliability coefficient of $r = .93$, alpha coefficient for the total sample ranging from .59 (opportunity for nurturance) to .78 (guidance) on individual scales. Kpenu (2009) reported internal consistency (coefficient alpha) ranging from .65 to .76 for the subscales, .92 for the total scale and Cronbach alpha of .82, showing a good internal consistency.

The Centre for Epidemiological Studies - Depression Scale (CES-D) is a standardized psychological instrument developed by Radloff (1977). The CES-D is a brief self-report scale designed to measure self-reported symptoms associated with depression experienced in the past week. The items of the Scale are symptoms associated with depression which have been used in previously validated Scales. The items were selected based on those practices that show depression in a person. The scale has 20 items, in a Likert-type scale to rate depressive symptomatology over the past week. The CES-D scale is scored by summing the

participant response ratings of 20 brief statements following the question. The respondents record the frequency/duration of occurrence of each symptom on a 4-point scale which ranges from 0 (rarely) to 3 (always). Prior to summing the overall total score, reverse scoring is used to calculate the rating of four positively worded items (4, 8, 12 & 16). Thus, total scores can range from 0 – 60, with a higher score indicating a higher frequency of symptoms occurring and/or indicating significant elevations in depressive symptomatology (Radloff, 1977). The CES-D has response options as – rarely or none of the time, some or little of the time, occasionally or a moderate amount of the time, most or all of the time. The CES-D has four subscales as follows: depressed affect (measuring dysphonic experiences: 5 items), positive affect (measuring optimistic and happy feelings: 4 items), somatic/retarded/vegetative activity (measuring problems with sleep, appetite, concentration and energy: 7 items) and interpersonal symptoms (measuring perceptions of others as being unfriendly and disliking the respondents: 4 items). Radloff (1977) reported split-half coefficient of $r = .90$. The CES-D has concurrent validity coefficient of $r = .51$ with the Symptom Checklist-90-Depression coefficient $r = .85$ (Derogatis, Lipman & Covi, 1977). CES-D have been validated in Nigeria, for example, Okafor (1997) reported a split-half coefficient $r = .41$. Olagunju, Aina and Fadipe (2012) reported Cronbach's alpha = .86.

Procedure

The administration of the instruments was done in the in-patient and out-patient departments of the four (4) hospitals, after the researcher had secured approval to conduct the study from the managements, and the Ethics Committee. The clinical folders of the participants were reviewed to know cancer patients and their appointment days for check-up through the help of nurses on duty. The researcher and four research assistants then administered the copies of the instruments individually to two hundred (200) medically diagnosed cancer patients in their respective wards and on their clinic days in the hospitals, particularly those who were willing to participate in the study. The participants were encouraged to complete the inventories. They supplied the demographic variables such as gender, age, etc. in the spaces provided. The completed copies of the inventories were collected immediately. The completed copies of the questionnaires were gathered from the hospitals. The participants of the study were clinical population. 174 copies of the three questionnaires were properly completed and scored. The approval for this study was granted by University Teaching Hospital Health Research Ethics Committee, in the South Eastern part of Nigeria.

Design/Statistics

The design of the study was a cross-sectional design. There were three independent variables. A hierarchical multiple regression was employed to test the hypotheses.

Results

In Table 1, Social Support correlated significantly with depressive symptoms ($r = -.58, p < .001$). This suggests that as social support increases, there is less depressive symptoms among cancer patients. In addition, age correlated significantly with depressive symptoms ($r = -.20, p < .05$). Similarly, this suggests that as age increases to older age, participants (cancer patients) exhibit less depressive symptoms; but the relationship between gender and depressive symptoms was not significant ($r = .01$).

Table 1: Correlation of depressive symptoms by social support, age and gender among cancer patients' scores

Variables	1	2	3	4
1	Depression	-		
2	SPS	-.58***	-	
3	Age	-.20**	.09	-
4	Gender	.10	-.06	-.36**

Note. *** $p < .001$; ** $p < .05$

Table 2: Hierarchical multiple regression predicting depressive symptoms by social support, age and gender among cancer patients scores

Predictors	Step 1			Step 2			Step 3		
	B	β	t	B	β	t	B	β	t
Social support	-.68	-.58	-9.38***	-.67	-.57	-.26	-.67	-.57	-9.22
Age	-	-	-	-.11	-.15	-2.35**	-.10	-.14	-2.12
Gender	-	-	-	-	-	-	.31	.02	.22*
R ²	.34			.36			.36		
ΔR^2	.34			.02			.00		
F	87.94			47.89			31.77		
ΔF	87.94			5.53			.50		

*** $p < .001$; ** $p < .01$; * $p > .05$; ΔR^2 = Change in R²; ΔF = Change in F.

The results in Table 2 showed that in Step 1, social support was a significant negative predictor of depressive symptoms, $\beta = -.58$; $t = -9.38$, $p < .001$. This is as expected. Increase in social support is associated with decrease in depressive symptoms. $B = -.68$ indicating that for every one unit rise in social support, depressive symptoms reduces by .68 units among cancer patients. Thus, social support accounted for 34% of the variance in depressive symptoms.

In Step 2, the findings indicated that age was a significant negative predictor of depressive symptoms, $\beta = -.11$; $t = -2.35$, $p < .05$. This is contrary to expectation. Increase in age is associated with decrease in depressive symptoms. $B = -.15$ indicating that for every one unit rise in social support, depressive symptoms reduces by .15 unit among cancer patients. Thus, age accounted for 2% of the variance in depressive symptoms.

In step 3, gender was not a significant negative predictor of depressive symptoms, $\beta = -.02$; $t = .22$, $p > .05$. This is as was expected. Being female or male did not influence depressive symptoms in persons grappling with cancer.

Discussion

The findings of this study showed that social support is negatively associated with depression in cancer patients. This is consistent with some previous studies (e.g., Gotlib, 1992; Hammen & Peters, 1978; Henderson et al, 2003; Jeong & An, 2017; Wondimagegnehu, Abebe, Abraha et al., 2019; Wu, 1991; Yoo, Shin, Jeong et al., 2017) showing that social support is associated with lower depression. This finding suggests that

reporting low social support could be a risk factor for depression, given the significantly higher CES-D scores exhibited by cancer patients with low social support.

It is possible to explain that the significant negative prediction of depression by social support found in this study within the context of social networking. It is evident from previous studies (e.g., Segrin et al., 2003; Segrin, 2001) which found that people who are isolated and lack social support in their lives are more likely to become depressed when under stress and to remain depressed longer than are people with supportive spouses' relationships. In particular, some authors (e.g., Dirksen, 2000; Helgeson et al., 2000) found that receiving inadequate social support tends to increase the experience of more difficult adjustment to illnesses. Thus, resilience to a difficult or stressful experience depends largely on the quality of support one receives from one's social network.

The result of the present study also showed that age is a negative predictor of depressive symptoms. This finding suggests that being younger could be risk factor for depression. This is consistent with some previous studies (e.g., O'Connor et al., 2001) who observed that depression tend to prevail in younger persons. However, the finding of this study is not in line with previous researches (e.g., Abramson et al., 1989; Afolabi et al., 2008; Depue & Monroe, 1978) which observed that older patients reported more depressive symptoms than the younger patients. Moreover, the result of the present study is not in agreement with Romanoski et al. (1992) who found that prevalence of depressive disorders increased with age.

The significant negative prediction of depression by age, where depression tends to decrease with age can be explained on the basis of marital status and daily hassles. Most young patients are likely to be single or divorcees who may not have

intimate relationships or a spouse to talk or relate with during difficult times in their lives. Moreover, younger participants might be in the categories of those starting their families, striving to excel on their jobs, and meet other social demands, all these can bring about a lot of stress (depression) on the younger participants, especially when complicated with a load of terminal illness. Older participants might be married and have children, even grandchildren to talk or relate with. With these, the older participants stand a better chance of expanding their scope of social network. According to previous researches (e.g., Gotlib, 1992; Hammen, 1978) which observed that depressed individuals have smaller or less supportive network, it might be that younger participants experienced adjustment difficulties. Holmes and Rahe (1967) observed that when an organism must make a substantial adjustment to the environment the likelihood of stress is high.

Further, gender had no significant relationship with depressive symptoms. This finding is consistent with previous research of Hildebrandt, Stage and Kragh-Soerensen, (2003), and Immanuel et al., (2015) which found that the symptoms of depression are similar between men and women. The finding of the present study is not in line with Galambos, Leadbeater and Barker (2004); Kessler, Berglund, Demler et al. (2003), Ryba and Hopko (2011), which found that gender, had a significant direct effect on depression severity, with females reporting increased depression. This finding is also not in line with Asim, Mekkdathil, Sathian, Elayedath, Kumar, Simkhada and Teijlingen, (2019) which found that female gender is a potential predisposing factor influencing the vulnerability of depression.

The finding of no significant influence of gender on depression in cancer patients is explained on the rationale that the respondents (both female and male cancer patients) were grappling with similar health challenges – cancer, and cancer does not respect any gender. As Immanuel et al. (2015) observed, lots of gender differences people report in literature, especially with reference to depression may be more of an illusion than reality.

Conclusion

This study, examined influence of social support, age and gender on depression among cancer patients. A total of 174 cancer patients participated in the study. The results of the study revealed a significant association of two of the three independent variables (social support, age), and no significant association of gender on depression. Therefore, as suggested by the present findings, low social support and younger age appear to be vulnerability factors which could predispose a person to depression, while gender of an individual appears not to determine the depressive state of the individual in the population studied. This implies that high social support received or perceived by an individual is associated with lower depression on the individual. Age of an individual appears to have influence on whether the individual will report more or less depressive symptoms. In the present study gender is not a risk factor.

The present study focused only on cancer patients especially those in the hospitals in the South-East geopolitical zone of Nigeria. This, however, may limit the extent of the generalization of the findings. Therefore, it is recommended that future studies with cancer patients should be extended to the other geopolitical zones of Nigeria. Also, personality and spiritual variables were not considered in the study. It is hereby recommended that studies that would build on personality variables, spirituality and social skills as moderators and mediators of depression in medical, especially cancer patients should be considered.

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