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Risks for Depression Among Ostomates in South Korea

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Abstract

Aim: This study explored factors associated with depressive status among older adult ostomates in Korea.

Methods: The study is a secondary analysis of data from a cross-sectional study with 217 ostomates aged 55 years or older from September 2, 2013 to October 30, 2013. General characteristics, daily routines, and depressive status were assessed to identify factors contributing to depressed mood among the older adult ostomates in South Korea. General characteristics included gender, age group, education level, financial status, employment, outing hours, perceived social isolation, leisure activity, and perceived health status. Daily routines included living environment inconvenience, leisure activity satisfaction, body image satisfaction, sleep satisfaction, exercise involvement, intimacy with spouse, sexual satisfaction, and satisfaction with quality of life.

Results: The prevalence of depressive status in older adult ostomates was 50.7%, but 40.8% in the same age population without ostomies. The factors associated with depressed mood among the older adult ostomates in South Korea were social isolation, perceived poor health status, perceived low quality of life, dissatisfaction with leisure activities, and poor financial status. Gender, age, and educational level were not associated with depression.

Conclusion: Nurses need to encourage older adults with ostomies to reduce social isolation and increase leisure activities by helping them utilize resources such as support groups and psychological support in collaboration with interdisciplinary team members.

Keywords: depressed, depression, ostomate, ostomy, stoma.

Introduction

Ostomates are people who have undergone an ostomy (stoma, *i.e.*, a surgically created opening in the abdomen used to urinate or defecate), which mostly results in a permanently altered body image and modified way of life. In 2003, when having an ostomy was initially classified as a disability, there were 6,585 ostomates in South Korea, and the ostomate population doubled to 13,374 in 2013 (Statistics Korea, 2015). The number of ostomates in South Korea will likely increase with increases in colon and bladder cancers, increasing older adult population, and increasing accidents (Park & Kim, 2007, 2009). A total of 91.5% of ostomates were in their 50s or older. The proportions of ostomates in their 50s was 16.8%, while 27.3% were in their 60s, 34.8% in their 70s, and 12.6% in their 80s and older (Park & Kim, 2009). The prevalence of both colon cancers and genitourinary tumors, which often require stoma creation, increases with age.

The ostomate population suffers physical, psychological, and social impairments (Oh et al., 2011). Physical dysfunction includes leakage of feces, stoma pouch inflation, stoma management, peristomal skin breakdown, poor hygiene, altered body image, frequent and irregular bowel movements, poor control of flatulence and odor, and selection of proper clothing (Claessens et al., 2015). These physical problems cause social withdrawal and isolation, difficulty maintaining a job and interference with sexual and leisure activities and traveling. Physical and social dysfunction in this population can lead to anxiety, depression, anger, despair, suicidal ideation, and low self-esteem (Amdt, Merx, Stegmaier, Ziegler, & Brenner, 2014; Borwell, 2009; Park & Ha, 2006). Furthermore, ostomates typically experience one or more complications associated with their stoma in their lifetimes, challenging while they adjust to their modified life with stoma care (Park & Kim, 2007). When older adult ostomates have

complications, they have more difficulty taking care of their stoma and the related supplies because they may have poor fine motor function due to aging. Eighty nine point three percent of the ostomates described their current health status as bad, and 93.2% received ongoing medical treatment, very high rates (Statistics Korea, 2015).

Ostomates obviously need to deal with these chronic issues throughout their lives, and this can cause psychological problems (Amdt et al., 2014; Borwell, 2009; Park & Ha, 2006). Because those with a chronic illness suffer more from depression and depressed mood than those without chronic illness (Moussavi et al., 2007) and older adults have a higher prevalence of ostomy than younger people (Statistics Korea, 2015), the risk of depression in the older adult population with ostomies is a matter for serious concern.

Therefore, this study (a) identified the risk of the depression and its severity in older adult ostomates, (b) analyzed the severity of depressed mood in terms of its general characteristics and difficulties experienced in daily life, and (c) identified factors that contribute to depressed mood in the subjects.

Methods

This study is a secondary analysis of data from a survey on the welfare needs of older adult ostomates funded by the Korea Disabled People's Development Institute to support policy development and research. This study identified factors associated with depressive status among the older adult population with an ostomy by analyzing these secondary data.

Participants and Procedure

The survey was completed by 217 people who underwent permanent ostomy surgery. Some were ostomates who registered with the Korea Ostomy Association in eight major cities of Korea: Seoul, Busan, Daegu, Daejeon, Gwangju, Wonju, Jinju, and Jeonju. Others were

ostomates who were treated at major university (teaching) hospitals that employed a wound, ostomy, and continence nurse. The subjects were those who completed a structured questionnaire between September 2, 2013 and October 30, 2013. The senior researcher participated in this study as the principle investigator, and this study was exempted from full review by the Institutional Review Board (IRB) of K. University (IRB No. KBUIRB-201507-SB-022-01). The informed consent for this research project was waived.

Participant Characteristics

Two aspects of the participants were compared by depressive status. One was general characteristics including age, educational level, monthly average income, economic status, subjective health status, hours spent outside the home, leisure activities, and social isolation. The other aspect was the daily routines of the participants, which included the level of inconvenience associated with the living environment and the pursuit of a social life, satisfaction with leisure activities, body image, and sleep, intimacy with a spouse, sexual satisfaction, and quality of life (QoL). The instrument used to measure depressed mood was the Korean-language version of the 10-item Center for Epidemiological Studies Depression Scale (CES-D-10). Ostomates were considered at 'high risk for depression' when they answered 'yes' to four or more items on the scale (Irwin, Artin, & Oxman, 1999).

Data Analyses

SPSS (IBM Corp. Released 2012. IBM SPSS Statistics for Windows, Version 21.0. Armonk, NY: IBM Corp.) was used to analyze the data. Descriptive statistics were used to analyze general characteristics, daily routines, and depression. Analysis of variance (ANOVA) and *t*-tests tested degrees of depression associated with general characteristics and daily routines. A multiple regression model tested the association of factors with depression among participants.

Bidirectional elimination was used as the stepwise selection of the multiple regression models: forward selection was applied first, then backward elimination was used.

Results

The results were summarized for four areas: depressive status of older adult ostomates, depressive status associated with general characteristics and daily routines, and factors associated with depression in this population.

Depressive Status of Older Adult Ostomates

Overall, 50.7% (n=102) of older adult ostomates were in depressed mood (Table 1). The ostomates with depressed mood had scores of 4 or more on the CES-D-10, with 4 being the reported cutoff score for depressive status.

Depressive Status by Participants' General Characteristics

Of the participants, 56.5% were male, and there was no significant gender difference in depressive status. Grouped by age, 44.7% of the ostomates were 55–64, 35.5% were 65–74, 17% were 75–84, and 2.8% were 85 years or older. The 75 to 84 year age group had the highest depressive status ($t=4.188$, $p=.007$). By education level, 40.9% were high school graduates; 21.4% were elementary school graduates; and 19.1% were middle school graduates. Elementary, middle, high school graduates had higher scores in depressive status than the college graduates based on the post hoc analysis ($t=3.617$, $p=.007$). By economic level, 17.7% of ostomates were in the lowest level, 35.9% lower, 43.1% in the middle, and 3.3% highest. Those in the low or very low economic level had higher depression scores than those in the high economic level ($t=6.072$, $p=.001$). Of the participants, 80.3% did not have occupations, had higher depression scores than those in not having occupations ($t=-2.339$, $p=.020$). Regarding outing hours, 3.5% had no outing hours and 9% had more than 8.5 hours a day. However, 87.5% had outing hours

between 30 minutes and eight hours a day. Participants who did not have any outing hours were more depressed ($t=4.938$, $p=.001$). Participants who felt socially isolated (34.7%) had higher depressive status ($t=-6.451$, $p<.001$). Those without leisure activities (50.5%) were more depressed than those involved in activities ($t=6.144$, $p<.001$). Participants with a negative perceived health status (unhealthy or very unhealthy) were 37.4% of the sample, and they had a higher depressive status than those with positive perception of their health ($t=13.115$, $p<.001$) (Table 2).

Depressive Status by Daily Routine

Table 3 summarizes results of depressive status by daily routine. 34.1% of participants answered they lived in very inconvenient living environments and they had higher scores in depressive status than those who answered living in somewhat inconvenient, neutral, and nearly convenient environment ($t=11.423$, $p<.001$). Regarding leisure activity satisfaction, 26.4% were dissatisfied with their leisure activities, and 12.3% were very dissatisfied with their leisure activities. Those who were dissatisfied and very dissatisfied had higher scores in depressive status ($t=20.961$, $p<.001$).

Of the participants, 14.3% were very dissatisfied with their body image, 39% were dissatisfied with their body image, and the rest were neutral (40%), satisfied (5.7%), and very satisfied (1.0%). Those who were very satisfied, satisfied, and neutral with the body image had lower depression scores compared to the participants who were dissatisfied and very dissatisfied ($t=13.952$, $p<.001$).

Participants reported they were very dissatisfied with their sleep quality (10.8%), dissatisfied (23.1%), neutral (47.6%), satisfied (35.1%), and very satisfied (3.3%). Those who

were less than satisfied with the quality of sleep had higher depression scores than others ($t=10.158$, $p<.001$).

Participants who did not exercise (52.4%) had higher depression scores (47.6%) ($t=-3.420$, $p=.001$). Those who were emotionally very distant from their spouse (6.7%) showed higher depression scores than those who were close to their spouse (28.0%) ($t=3.810$, $p=.006$). With regard to the sexual satisfaction, those who were with very dissatisfied (28.3%) had higher depression scores than those who were satisfied (4.3%) or neutral (38.4%) ($t=4.013$, $p=.004$).

When asked about the quality of life (QoL), 10.3% of participants answered they were satisfied with QoL, and 44.1% were neutral. However, 32.8% were dissatisfied and 12.7% were very dissatisfied with QoL. Those who were less than neutral to QoL had higher depression scores ($t=21.861$, $p<.001$).

Factors associated with Depression in Older Adult Ostomates

The participants' general characteristics and daily routines were significantly associated with their depressive status. A multiple regression model was used to identify the combined influence of these variables on depression among ostomates. Association and multicollinearity among independent variables were analyzed by examining the tolerance and the variation inflation factor (VIF) to verify the assumptions of the regression analysis regarding the independence of variables. The Durbin–Watson statistic was used to detect autocorrelation, and the test statistic d was 1.79, which meant no autocorrelation. Tolerance was between 0.66 and 0.84, and the VIF was 1.19 to 1.51, which meant no risk of multicollinearity in the regression analysis. The multiple regression analysis identified the factors that are associated with depression as social isolation ($\beta=0.31$, $p<.001$), self-perceived health status ($\beta=0.19$, $p=.021$),

perceived QoL ($\beta=0.24$, $p=.004$), leisure activity ($\beta=0.17$, $p=.029$), and economic level ($\beta=0.16$, $p=.035$). The coefficient of determination, adjusted R^2 , was 55.1% (Table 4).

This study finds a prevalence of depressive status in older adult ostomates of 50.7% while the prevalence of depression is 40.8% among the general older adult population in Korea. This study also demonstrates that the following factors contribute to depressive status in older adult ostomates: social isolation, perceived health status, perceived QoL, leisure activities, and economic level.

Discussion

This study investigated factors associated with depressive status among 217 older adult ostomates. The results of the study demonstrate social isolation, perceived health status, perceived QoL, leisure activities, and economic level as factors associated with depressed mood among the participants.

However, this study has limitations. There were many variables divided up to five groups with very small samples size about three to eight participants. This limitation made it difficult to do any multiple-comparison. For instance, only three participants stated their living environment was never inconvenient and eight stated it was nearly inconvenient when asked about the living environment (Table 3).

The primary data for the survey did not specify the reasons for an ostomy, whether cancer or other reasons. There are many medical diagnoses requiring an ostomy, such as colon cancers, inflammatory bowel diseases, and bowel perforation (Van Arendonk, Tymitz, Gearhart, Stem, & Lidor, 2013). The primary data did not disclose how long since participants underwent the ostomy, and whether the ostomy is permanent or temporary. In addition, the data did not provide any physical, psychological, and social functional levels. For instance, some ostomates had

physical dysfunctions including leakage of feces, stoma pouch inflation, stoma management, peristomal skin breakdown, poor hygiene, altered body image, frequent and irregular bowel movements, poor control of flatulence and odor, and selection problems of proper clothing before or during the survey, potentially affecting depressed mood. For example, ostomy-related physical conditions are associated with the quality of life, which relates to depressive status in ostomates (Vonk-Klaassen, De Vocht, Ouden, Eddes, & Schuurmans, 2016). Therefore, the underlying diseases associated with ostomy, past medical history, the length of having the ostomy, existing ostomy related problems, and any stoma complications need to be investigated to identify exact factors contributing to depressive status.

Unlike depression in the general adult population, depressive symptoms in older adults include impaired sleep, anorexia, and physical symptoms (Cattell, 2006; Evans & Mottram, 2000). Stoma-related discomfort such as odor and gas can worsen these depressive symptoms in the ostomates. Hence, older adult ostomates require more clinical and community attention as they have higher risks of depressive status and specific depressive symptoms due to both emotional and physical difficulties.

Conclusion

Social isolation, associated with depressive status among the geriatric ostomate population, increases when ostomates experience social difficulties related to their stoma. In addition, depressed mood is associated with less leisure activities in this population. As ostomate support groups can alleviate these problems, older adult ostomates support groups should be strongly counseled to join. For people whose cultural background is traditional Confucianism, which comprises most Koreans, a customized approach to reducing social

isolation and enhancing leisure activities is necessary, because these individuals believe in saving face, maintaining their dignity, and valuing body integrity.

Both perceived health status and QoL are significantly associated with depression in older adult ostomates, indicating the importance of delivering nursing care that supports ostomates' efforts to accept and positively cope with changes in their lives related to their stomas.

Perceived health status affects psychological well-being (Knowles et al., 2014). Psychological support is emphasized as a way to enhance self-efficacy (Knowles et al., 2014). Therefore, nurses need to help older adult ostomates perceive their QoL positively and cope with life after an ostomy. To this end, nurses should collaborate with members of interdisciplinary teams, including social workers, laughter therapists, and psychologists.

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Disclosure

No conflict of interest has been declared by the authors. All authors of this research 1) have made substantial contributions to conception and design, or acquisition of data, or analysis and interpretation of data; 2) have been involved in drafting the manuscript or revising it critically for important intellectual content; and 3) have given final approval of the version to be published. Each author has participated sufficiently in the work to take public responsibility for appropriate portions of the content. All authors read and approved the final manuscript.

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Table 1. Depression rates of older adult ostomates (N=217)

	Depression scale score	N (%)
No depression	0-3	99 (49.3)
Depression	≥ 4	102 (50.7)
Missing data excluded		

Table 2. General characteristics of older adult ostomates (N=217)

Characteristics		n (%)	M (SD)		t/F (p)	Bonferroni
Gender	Male	121(56.5)	3.83(2.90)		-1.349 (.179)	
	Female	93(43.5)	4.41(3.11)			
Age	55 – 64	97(44.7)	3.62(2.68)	a	4.188 (.007)	a<b
	65 – 74	77(35.5)	3.79(2.98)	a		
	75 – 84	37(17.0)	5.52(3.32)	b		
	85 or older	6(2.8)	5.67(3.78)	ab		
Education level	Elementary	46(21.4)	4.68(3.13)	a	3.617 (.007)	a>b
	Middle school	41(19.1)	4.63(3.04)	a		
	High school	88(40.9)	4.15(2.85)	a		
	College	28(13.0)	2.54(3.00)	b		
	Graduate school	12(5.6)	2.20(1.69)	ab		
Economic level	High	7(3.3)	1.86(1.68)	a	6.072 (.001)	a<b
	Middle	90(43.1)	3.27(2.70)	ab		
	Low	75(35.9)	4.65(3.10)	b		
	Very low	37(17.7)	5.14(3.02)	b		
Employed	Yes	42(19.7)	3.05(2.86)		-2.339 (.020)	
	No	171(80.3)	4.28(2.99)			
Outing hours (hours/day)	0	7(3.5)	6.71(3.04)	a	4.938 (.001)	a>b
	0.5 – 2	61(30.3)	4.78(3.07)	ab		
	2.5 – 4	62(30.8)	3.67(2.75)	ab		
	4.5 – 8	53(26.4)	3.71(3.07)	ab		
	8.5 or more	8(9.0)	2.00(1.94)	b		
Social isolation (perceived)	No	139(65.3)	3.15(2.79)		-6.451 (<.001)	
	Yes	74(34.7)	5.79(2.62)			
Leisure activity Involvement	No	108(50.5)	5.20(2.77)		6.144 (<.001)	
	Yes	106(49.5)	2.80(2.74)			
Perceived health status	Very healthy	8(3.8)	2.00(1.31)	a	13.115 (<.001)	a<b
	Somewhat healthy	55(25.9)	2.47(2.30)	a		
	Neutral	69(32.5)	3.64(3.06)	a		
	Unhealthy	60(28.3)	5.23(2.61)	b		
	Very unhealthy	20(9.4)	6.65(2.92)	b		

Missing data excluded

Table 3. Daily life characteristics of older adult ostomates (N=217)

Characteristics		n(%)	M(SD)		t/F(p)	Bonferroni
Living environment	Very inconvenient	73(34.1)	5.84(2.69)	a		
Inconvenience	Somewhat inconvenient	96(44.9)	3.11(2.73)	b	11.423 (<0.01)	a>b
	Neutral	34(15.9)	3.80(3.07)	b		
	nearly inconvenient	8(3.7)	2.38(1.69)	b		
	never inconvenient	3(1.4)	1.33(1.15)	ab		
Leisure activity satisfaction	Very satisfied	2(0.9)	.00(.00)	a		
	Satisfied	25(11.8)	1.74(2.49)	a	20.961 (<.001)	a<b
	Neutral	103(48.6)	3.12(2.45)	a		
	Unsatisfied	56(26.4)	5.65(2.75)	b		
	Very unsatisfied	26(12.3)	6.64(2.46)	b		
Body image satisfaction	Very satisfied	2(1.0)	1.00(1.41)	a		
	Satisfied	12(5.7)	2.20(2.62)	a	13.952 (<.001)	a<b<c
	Neutral	84(40.0)	2.71(2.44)	a		
	Unsatisfied	82(39.0)	4.71(2.90)	ab		
	Very Unsatisfied	30(14.3)	6.45(2.47)	abc		
Satisfaction with Sleep	Very satisfied	7(3.3)	4.86(3.63)	ab		
	Satisfied	32(35.1)	2.77(2.85)	a	10.158 (<.001)	a<b
	Neutral	101(47.6)	3.28(2.66)	a		
	Unsatisfied	49(23.1)	5.11(2.78)	b		
	Very unsatisfied	23(10.8)	6.75(2.61)	b		
Exercise involvement	Yes	99(47.6)	3.35(2.75)		-3.420 (.001)	
	No	109(52.4)	4.79(3.09)			
Intimacy with spouse	Very close	24(14.6)	3.83(3.02)	ab		
	close	46(28.0)	2.73(2.58)	a	3.810 (.006)	a<b
	Neutral	60(36.6)	4.19(2.60)	ab		
	Distant	23(14.0)	4.75(2.99)	ab		
	Very distant	11(6.7)	5.80(3.29)	b		
Sexual satisfaction	Satisfied	6(4.3)	1.50(1.67)	a		
	Neutral	53(38.4)	3.08(2.72)	a	4.013 (.004)	a<b
	Unsatisfied	40(29.0)	4.03(2.56)	ab		
	Very unsatisfied	39(28.3)	5.14(3.15)	b		
Satisfaction with quality of life	Satisfied	21(10.3)	1.45(2.04)	a	21.861 (<.001)	a<b
	Neutral	90(44.1)	3.10(2.57)	a		
	Unsatisfied	67(32.8)	5.17(2.86)	b		
	Very unsatisfied	26(12.7)	6.54(2.26)	b		

Table 4. Factors associated with depressive status in older adult ostomates

	B	S.E	β	t(p)	Adj. R ²	F(p)	Tolerance	VIF
Constant	-3.94	1.19		-3.31(.001)				
Social isolation	1.86	.49	.31	3.80(<.001)	.376	61.32(<.001)	.66	1.51
Perceived health status	0.51	.22	.19	2.35(.021)	.467	44.89(<.001)	.70	1.44
Quality of life	0.84	.29	.24	2.92(.004)	.507	35.33(<.001)	.67	1.49
Leisure activities	0.98	.44	.17	2.22(.029)	.534	29.70(<.001)	.74	1.35
Economic level	0.62	.29	.16	2.14(.035)	.551	25.57(<.001)	.84	1.19