

Prevalence and Correlates of Psychiatric Symptoms in North Korean Defectors

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Objective The aim of the present study is to assess the prevalence of psychiatric symptoms and associated factors in North Korean Defectors (NKDs).

Methods One hundred forty-four NKDs (male: 20; female: 124; average age: 40.4±11.7 yrs.) completed the Symptom Checklist-90-Revised (SCL-90-R) and the Center for Epidemiologic Studies Depression scale (CES-D). A stepwise logistic regression analysis was conducted to evaluate factors associated with the psychiatric symptoms of the participants.

Results NKDs mainly reported somatization (42.4%) and depressive symptoms (38.9%). Female NKDs showed higher prevalence of somatization ($p=0.001$), anxiety ($p=0.020$), hostility ($p=0.026$) and psychoticism ($p=0.022$) than males. The presence of physical illness was strongly related to most psychiatric symptoms on the SCL-90-R including somatization ($p<0.001$), obsessive-compulsive symptoms ($p=0.020$), interpersonal sensitivity ($p=0.031$), depression ($p<0.001$), anxiety ($p<0.001$), hostility ($p=0.011$), paranoid ideation ($p=0.015$) and psychoticism ($p<0.001$). Younger age, unemployment, lower income, and longer duration of defection were found to be the risk factors of psychiatric symptoms. In regard to mental health service utilization, we found that most (83.3%) of the participants had not received any form of psychiatric help.

Conclusion Somatization and depression were the most prevalent psychiatric symptoms in NKDs. Our results suggest that psychiatric symptoms accompany certain sociodemographic and clinical characteristics that are associated with susceptibility to acculturation stressors. An understanding of these factors will be helpful providing appropriate mental health services to NKDs.

Psychiatry Investig 2011;8:179-185

Key Words North Korean defectors, Psychiatric symptoms, Acculturation.

INTRODUCTION

The number of defecting North Koreans has increased considerably since 1995, and by 2009 more than 15,000 defectors had entered South Korea.¹ With the ever-increasing number of North Korean Defectors (NKDs) entering South Korea, helping their successful adaptation to South Korean society has become a major undertaking for the government of South Korea.² The mental health of refugees or immigrants has been re-

ported to have a significant effect on their ability to adapt and settle in their new environment, i.e., acculturate.^{3,4}

Prior studies reported that the decisive factors for the mental health of refugees were psychological traumas experienced during their escaping periods, i.e., the period of time between escaping from the country of origin and finally arriving in the country where the defector settles.⁵⁻⁷ On the other hand, some studies have noted that risk and resilience factors in the post-migratory environment have an even stronger relationship with psychological morbidity than exposure to traumatic events.⁸⁻¹⁰

A number of studies on the mental health of refugees have focused on symptoms of post-traumatic stress disorder (PTSD), depression and anxiety.¹¹⁻¹⁵ According to the previous studies on the mental health of NKDs in South Korea, 37.6% of defectors experienced psychological problems; 22.2% suffered from depression, 18.8% complained anxiety, and 18.2% had

Received: December 31, 2010 Revised: March 3, 2011

Accepted: March 11, 2011 Available online: July 19, 2011

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PTSD.¹³

However, few study has assessed overall psychiatric symptoms and their correlates among NKDs.

We conducted the present study with three objectives. Firstly, we assessed prevalence of overall psychiatric symptoms among NKDs rather than concentrating on PTSD symptoms. Secondly, we explored contributory risk factors to explain psychiatric symptoms in NKDs. Thirdly, we investigated the utilization of mental health services by NKDs.

METHODS

The participants were 144 NKDs aged 21 to 75 years living in the city of Incheon in Republic of Korea between July and October, 2009 (20 males, 124 females; mean age 40.4 ± 11.7 years). They completed the Symptom Checklist-90-Revised (SCL-90-R) and the Center for epidemiologic studies depression scale (CES-D), after informed consents for all participants were obtained. In addition, brief questionnaire on sociodemographic characteristics, physical illnesses, subjective general health status and mental health service utilization was also completed.

Symptom Checklist-90-Revised (SCL-90-R)

The SCL-90-R is a 90 item self-report inventory developed in the 1980s by Derogatis for the assessment of broad range of psychological problems and symptoms of psychopathology.¹⁶ It has been used as a screening measure of general psychiatric symptomatology. The SCL-90-R is a revised version of the original SCL-90. The SCL-90-R replaces some of the items on the Anxiety and the Obsessive-Compulsive dimensions of the SCL-90 that were flawed psychometrically. Each of the 90 items is rated on a five-point scale of distress (from "0=not at all" to "4=extremely"). Patients are asked to rate the severity of their experiences with each symptom over the past week. Responses are scored in terms of nine primary psychiatric symptom dimensions: somatization, obsessive-compulsive symptoms, interpersonal sensitivity, anger-hostility, depression, anxiety, paranoid ideation, phobic anxiety and psychoticism.¹⁶⁻¹⁸ Participants with T score on each dimension higher than 60 were considered to have an appreciable level of symptoms.¹⁶

Center for Epidemiologic Studies Depression Scale (CES-D)

The CES-D is a 20 item self-report questionnaire, which assesses the extent of depressive symptoms experienced during the past week.¹⁹ Items are scored on a four-point scale from 0 (rarely) to 3 (most or all of the time) so that higher scores reflect more severe depressive symptoms. In the present study, participants completed the Korean version of the CES-D, which

has been found to have high reliability and validity.²⁰ In the current study, score of 21 was used for cut-off of being significant depressive mood.²⁰

Mental Health Services Utilization

The utilization of mental health care services since having defected from North Korea was assessed by recording the participants' responses to the following questions: 1) "Have you ever felt a need for mental health services during last year?"; 2) "Have you ever used mental health services?"; 3) "If you have, what kind of the facility was?"; 4) "If you haven't, what was the reason?"

Descriptive statistics were used to summarize sociodemographic characteristics. The primary symptom dimensions of participants were analyzed according to gender by chi-square tests. A stepwise logistic regression analysis was performed to explore the relationships between the nine primary psychiatric symptom dimensions and the sociodemographic characteristics.

All calculations were performed using Statistical Package for Social Sciences (SPSS version 15.0; SPSS Inc., Chicago, IL, USA), and a p -value < 0.05 was considered to indicate statistical significance in all analyses.

RESULTS

Characteristics of the study population

A summary of the sociodemographic characteristics of the participants is shown in Table 1. Most (72.9%) were married, however, just over a half of the participants (54.9%) escaped from North Korea along with their family. Ninety-eight subjects (68.1%) had an escaping period in a third country of more than three years, and the mean escaping period in a third country was 66.3 ± 48.0 months. One hundred twenty four subjects (86.1%) have stayed for more than one year in South Korea. The mean duration of residence in South Korea was 33.3 ± 24.9 months

The majority of the subjects (88.9%) were unemployed at the time of the study, and 85 subjects (59.0%) had no monthly income. The defectors received an average of 10.1 ± 2.8 years of education in North Korea, and 99 (69.2%) graduated from high school in North Korea, and only 5 had received further education in a South Korean college or university.

Seventy-seven of the defectors (54.2%) had physical illnesses or symptoms (Table 1).

Prevalence of psychiatric symptoms

Table 2 presents the prevalence of psychiatric symptoms on each of the nine SCL-90-R dimensions. Participants with T score on each dimension higher than 60 were considered to

Table 1. Sociodemographic characteristics of subjects (N=144)

Variable	n (%)	
Gender	Male	20 (13.9)
	Female	124 (86.1)
Age (yr)	20-29	20 (13.9)
	30-39	60 (41.7)
	40-49	40 (27.8)
	50-59	11 (7.6)
	60-69	6 (4.2)
	70 and above	7 (4.9)
Marital status	Married	105 (72.9)
	Single	25 (17.3)
	Separated/Widowed/Divorced	9 (6.3)
	Missing data	5 (3.5)
Escaping with family	Yes	79 (54.9)
	No	65 (45.1)
Escaping period in a third country (month)	66.3±48.0	
Residence period in South Korea (month)	33.3±24.9	
Employment	Employed	16 (11.1)
	Unemployed	128 (88.9)
Income (/month)	>1,500,000 won	5 (3.5)
	500,000-1,500,000 won	32 (22.2)
	1< and <500,000 won	14 (9.7)
	No income	85 (59.0)
	Missing data	8 (5.6)
Educational level in North Korea	No	1 (0.7)
	~Elementary school graduate	8 (5.6)
	~Middle-high school	99 (69.2)
	~College/University	35 (24.5)
Presence of physical illness	Yes	77 (54.2)
	No	65 (45.1)
	Missing data	2 (1.4)
Gastrointestinal diseases (n=40)	Gastritis/Gastric ulcer	20 (13.9)
	Esophagitis	5 (3.5)
	Liver disease	8 (5.6)
	Gall stone	1 (0.7)
	Pancreatitis	1 (0.7)
	Unknown	5 (3.5)
Cardiovascular diseases (n=10)	Hypertension	6 (4.2)
	Hypotension	3 (2.1)
	Hyperlipidemia	1 (0.7)
	Unknown	2 (1.4)
Musculoskeletal diseases (n=9)	Back pain/Hernia of disk	7 (4.9)
	Knee joint disease	1 (0.7)
	Unknown	1 (0.7)

Table 1. Continued

Variable	n (%)	
Endocrine/ Infectious diseases (n=5)	Diabetes mellitus	3 (2.1)
	Thyroid gland disease	1 (0.7)
Nervous system diseases (n=4)	TB pleurisy	1 (0.7)
	Headache	2 (1.4)
	Dizziness	1 (0.7)
Urinary diseases (n=4)	Brain tumor	1 (0.7)
	Kidney stone	2 (1.4)
	Urinary track infection	1 (0.7)
Pulmonary diseases (n=2)	Unknown	1 (0.7)
	Bronchitis	1 (0.7)
	Unknown	1 (0.7)

have an appreciable level of symptoms.¹⁶ The NKDs reported predominantly somatization (42.4%) and depressive symptoms (38.9%). Females reported a higher prevalence of somatization ($\chi^2=9.962$, $p=0.001$), anxiety ($\chi^2=5.973$, $p=0.020$), hostility ($\chi^2=4.955$, $p=0.026$) and psychoticism ($\chi^2=5.237$, $p=0.022$) than males.

Among NKDs, depressive symptoms (CES-D scores of 21 or more) were found in 52.4% of the female and 30.0% of the male (mean score on CES-D in current study was 23.5 ± 13.7).

Contributory factors associated with psychiatric symptoms

The results of the stepwise logistic regression analysis are summarized in Table 3. The presence of physical illness was associated with the significant level of symptoms on the nine primary psychiatric symptom dimensions, including somatization ($\beta=-1.895$, $p<0.001$), obsessive-compulsive ($\beta=-1.061$, $p=0.020$), interpersonal sensitivity ($\beta=-0.980$, $p=0.031$), depression ($\beta=-1.515$, $p<0.001$), anxiety ($\beta=-1.804$, $p<0.001$), hostility ($\beta=-1.243$, $p=0.011$), paranoid ($\beta=-1.098$, $p=0.015$) and psychoticism ($\beta=-1.842$, $p<0.001$).

Our results also showed that female gender was associated with more prevalent somatization ($\beta=2.483$, $p=0.005$), and younger age was associated with hostility ($\beta=-0.053$, $p=0.039$) and paranoid ideation ($\beta=-0.050$; $p=0.033$). Unemployment was related to higher prevalence of obsessive-compulsive symptoms ($\beta=2.769$, $p=0.022$) and psychoticism ($\beta=2.013$, $p=0.037$). Low monthly income was related to obsessive-compulsive symptoms ($\beta=-0.431$, $p=0.046$) and interpersonal sensitivity ($\beta=-0.552$, $p=0.012$). The longer the duration of the escaping period, the more likely the participants were to report depressive symptoms on SCL-90-R ($\beta=0.102$, $p=0.044$).

The status for mental health services utilization

Table 4 summarizes the responses to the questions about uti-

Table 2. Prevalence of psychiatric symptoms measured by SCL-90-R or CES-D (N=144)

Dimension	Male (N=20)		Female (N=124)		Total(N=144)		χ^2	p-value
	N	%	N	%	N	%		
Somatization (SOM)**	2	10.0	59	47.6	61	42.4	9.962	0.001
Obsessive-Compulsive (O-C)	3	15.0	36	29.0	39	27.1	1.717	0.279
Interpersonal Sensitivity (I-S)	3	15.0	35	28.2	38	26.4	1.551	0.280
Depression (DEP)	5	25.0	51	41.1	56	38.9	1.885	0.170
Anxiety (ANX)*	2	10.0	47	37.9	49	34.0	5.973	0.020
Hostility (HOS)*	1	5.0	35	28.2	36	25.0	4.955	0.026
Phobic Anxiety (PHOB)	2	10.0	39	32.0	41	28.9	4.038	0.061
Paranoid Ideation (PAR)	5	25.0	34	27.4	39	27.1	0.051	0.821
Psychoticism (PSY)*	2	10.0	44	35.8	46	32.2	5.237	0.022
Depressive symptom (CES-D \geq 21)	6	30.0	65	52.4	71	49.3	3.463	0.091

* $p < 0.05$, ** $p < 0.01$. SCL-90-R: symptom Checklist-90-Revised, CES-D: Center for Epidemiologic Studies-Depression Scale

lization of mental health services. Among 144 subjects, ninety-three (64.6%) of the subjects reported that they thought subjectively their own general health status was poor. Sixty-nine subjects (47.9%) had felt need for taking mental health services during past year. However, 120 participants (83.3%) said they had not received any form of psychiatric help. The most commonly reported barrier in accessing mental health services was insufficient information (56.3%).

DISCUSSION

To the best of our knowledge, the present study is the first study to explore a comprehensive range of psychiatric symptoms experienced by NKDs using the SCL-90-R. Our results indicated that the most common psychiatric symptoms were somatization and depression in NKDs and they were related to physical illness and several sociodemographic variables such as younger age, female, socioeconomic status and duration of the escaping period.

Somatization has been widely reported among refugees.²¹ Psychological theorists have viewed somatization as an alternative to depression.^{21,22} Other investigations have demonstrated the association between PTSD and somatization.^{23,24} According to these studies, PTSD symptoms, particularly psychological numbing, was the best predictor of somatization after controlling for mood and anxiety disorders.²⁴ Many studies have shown that refugees and immigrants from Asia are especially were predisposed to somatization during the acculturation process.^{22,25} This may be attributed to their traditional culture which tend to discourage the direct expression of emotional distress. Although there are limited number of researches on cultural adjustment experiences of NKDs, NKDs share Asian cultural backgrounds and may have difficulty in dealing with emotional distress when they confront with accultur-

ation stressors. In addition, NKDs have reportedly had high rate of PTSD.² It may explain high rate of somatization in our participants.

The prevalence of depressive symptoms found in the present study was twice as high as that found in the South Korean general population using the CES-D scale.²⁶ This result is consistent with notions in previous studies on NKDs.²⁷⁻²⁹

Physical symptoms were reported to be an important antecedent of depressive symptoms.^{30,31} A prior study on the patients treated in public mental health facilities reported that 45% of the patients had an active physical disease and one sixth had a disease causing or exacerbating his or her mental disorder.³² And somatic symptoms and disorders were linearly correlated with depressive symptoms in a study on immigrants in a western country.³³ The present findings therefore add to prior knowledge that physical health problem is a risk factor for psychiatric symptoms in refugees or immigrants.

Our results indicated that younger subjects more likely present with hostility and paranoid ideation symptoms. Youths have developmental tasks such as establishing identity and independence and these tasks pose particular challenges when they are adapting to a new society.³⁴ Young NKDs might have high expectations of what their life would be like when they moved to South Korea and experiencing disappointment might make them hostile and suspicious when they realize that their expectations are inaccurate.

In current study, compared with males, females reported more somatization, anxiety, hostility and psychoticism, but there were no gender differences in depressive symptoms on either the SCL-90-R or the CES-D. This result supports the finding in a previous study, which also reported no significant gender differences in depressive symptoms in NKDs.²⁷

Financial difficulties have been associated with a higher risk of mental disorders among refugees.³⁵ Employment is known

Table 3. Stepwise regression analysis on the relationship between psychiatric symptoms and sociodemographic variables (N=144)

Variable	Somatization	Obsessive-compulsive	Interpersonal sensitivity	Depression	Anxiety	Hostility	Phobic anxiety	Paranoid ideation	Psychoticism
Physical illness	-1.895 (<0.001)***	-1.061 (0.020)*	-0.980 (0.031)*	-1.515 (<0.001)***	-1.804 (<0.001)***	-1.243 (0.011)*	-0.554 (0.202)	-1.098 (0.015)*	-1.842 (<0.001)***
Gender	2.483 (0.005)*	0.444 (0.578)	0.575 (0.478)	0.260 (0.704)	1.544 (0.080)	1.410 (0.221)	1.196 (0.184)	0.117 (0.880)	1.021 (0.242)
Age	-0.002 (0.929)	0.014 (0.450)	-0.038 (0.073)	-0.006 (0.717)	-0.009 (0.641)	-0.053 (0.039)*	-0.011 (0.585)	-0.050 (0.033)*	-0.030 (0.145)
Marital status	-0.604 (0.202)	0.045 (0.928)	-0.166 (0.727)	-0.483 (0.282)	-0.580 (0.218)	0.702 (0.197)	-0.227 (0.627)	0.014 (0.977)	0.320 (0.517)
Occupation	0.653 (0.411)	2.769 (0.022)*	1.302 (0.110)	1.314 (0.111)	1.342 (0.127)	0.043 (0.958)	1.376 (0.109)	-0.293 (0.701)	2.013 (0.037)*
Income	-0.189 (0.398)	-0.431 (0.046)*	-0.552 (0.012)*	-0.252 (0.228)	-0.281 (0.209)	-0.041 (0.863)	-0.419 (0.050)	-0.227 (0.304)	-0.294 (0.201)
Educational level in North Korea	-0.003 (0.984)	0.082 (0.530)	0.072 (0.604)	-0.071 (0.571)	-0.089 (0.508)	0.059 (0.695)	0.145 (0.261)	0.157 (0.257)	0.030 (0.827)
Escaping with family	-0.376 (0.526)	0.407 (0.517)	0.454 (0.481)	0.268 (0.633)	-0.049 (0.934)	1.199 (0.148)	-0.034 (0.956)	0.101 (0.867)	0.470 (0.455)
Escaping period in a third country	-0.031 (0.571)	0.057 (0.300)	-0.002 (0.969)	0.102 (0.044)*	0.079 (0.157)	0.000 (0.996)	0.082 (0.125)	0.063 (0.268)	0.019 (0.750)

*p<0.05, **p<0.01, ***p<0.001

to be associated with a lower risk of mental disorders and to be helpful for the recovery from mental disorders.^{36,37} In accordance with previous studies, our findings suggested significant relationships between unemployment, lower income and psychiatric symptoms among NKDs.

The relationship between psychiatric symptoms and the escaping period in a third country showed the expected results in terms of depressive symptom. A number of studies have addressed escaping period as a risk factor for psychopathology.³⁸⁻⁴¹ Previous findings indicated that the mental health of NKDs got worse after a prolonged escaping period, and this is consistent with our results.^{42,43}

In this study, marital status and escaping without family were not related to any of the psychiatric symptom dimension. In previous studies on refugees, it has been reported that separation from family members could cause psychological distress and was related to the prevalence of PTSD symptom.^{39,44} Jeon et al. also reported traumas related to family members in NKDs were associated with the development of PTSD.² This difference may be due to the focus of the present study on a broad range of psychiatric symptoms rather than just on symptoms of PTSD. We did not shed light on the psychological impacts of the various negative events during the escaping period including personal trauma, family related problems and the asylum procedures themselves. Thus, the reason for this inconsistency needs further research in the future.

There was no significant relationship between education level in North Korea and psychiatric symptoms. These results are consistent with the findings of other studies, which suggest that education level was not a determining factor in the development of PTSD.^{2,43}

The majority of defectors in South Korea have been receiving financial assistance or medical support from the government.¹ In a previous study, their subjective satisfaction level with government support for medical care has been reported to be low.⁴⁵ However, the use of mental health services by NKDs has not been reported. In our study, the majority of participants haven't used psychiatric services in spite of an apparent need of them, mainly because of lack of information.

One limitation of our study was its cross-sectional design, which made it impossible to identify causal relationships between psychiatric symptoms and other variables. And we also could not explore the changes in psychiatric symptoms through acculturation process.

In addition, this study did not use nationwide sample, so generalization of our results to all NKDs may be limited. However, this limitation is mitigated by the sample size, which is larger than those used in previous studies.^{2,42,46} Although far more females (n=124) than males (n=20) participated in the present research, in terms of statistical power the male sample

Table 4. The mental health services utilization among North Korean defectors (N=144)

	Variable	Frequency (%)
Needs for mental health service	Yes	69 (47.9)
	No	75 (52.1)
Mental health care Utilization	Yes	24 (16.7)
	No	120 (83.3)
Experienced service facilities	Mental health center	1 (4.2)
	Psychiatric ward (General hospital)	17 (70.8)
	Counseling or psychotherapy	1 (4.2)
	School (educational institution)	2 (8.3)
	The others	3 (12.5)
Reasons for poor access	Heavy cost	6 (8.5)
	Distance from their place of residence	1 (1.4)
	Insufficient information	40 (56.3)
	No serious problem	16 (22.5)
	The others	8 (11.3)

size can be expected to be sufficiently large for gender effects to be detected in psychiatric symptoms.⁴⁷

Thirdly, we did not use structured diagnostic interviews to assess psychiatric symptoms. However, the questionnaires we used have good reliability and validity,⁴⁸⁻⁵⁰ and are acceptable tools for use in the screening of the general population for psychiatric symptoms.

Lastly, there was no control group in the current study. Thus we could not assess if psychiatric symptoms would be more prevalent in North Korean defectors than control group.

In spite of several limitations, strengths of this study are that it is the first study into the relationship between physical illness and psychiatric symptoms among NKDs, and the utilization of mental health services by NKDs. The study is also unique in the use of the SCL-90-R for the assessment of psychiatric symptoms.

In conclusion, we found that somatization and depressive symptoms were the most prevalent psychiatric symptoms in NKDs. Psychiatric symptoms in NKDs were related to presence of physical illnesses, female gender, younger age, low economic status, and longer escaping period in a third country. These findings have several important implications for mental health policy makers for NKDs; the importance of intensification of physical health programs, employment programs and provision of sufficient information on mental health services. And we also suggest that an understanding of sociodemographic factors related to psychiatric symptoms will be helpful in providing appropriate mental health care to NKDs.

Acknowledgments

This research was financially supported by a grant from Gachon University Gil Hospital in 2010.

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