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Mental health literacy in South Korea.

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Abstract

The study aimed to examine the Korean public's recognition of mental disorders, attitudes towards mental disorders and knowledge and beliefs about professional or self-help for mental disorders. In all 253 participants were presented with case vignettes describing bulimia nervosa, bipolar disorder, substance addiction, depression, schizophrenia, OCD, ADHD, anorexia and social phobia. Participants were asked to identify described mental disorders in the vignettes, to rate each character's adjustment to live with the mental problems and to rate the likelihood of suggesting several types of help for each character. Participants noted their previous history of exposure to mental disorders. Substance addiction was recognized the most (80.2%) and anorexia the least (10.7%). Participants responded the psychologist/psychiatrist's help the most helpful. Of the nine mental disorders, the recognition of six mental disorders were significantly predicted by predictors included in this study, and amongst the factors, higher level of education was found to be the most significant predictor for high recognition of mental disorders. Compared to other countries, Korean's ability to recognize mental disorders was poorer than British and there was difference between South Korean and other Eastern countries in terms of ability to recognize mental disorders even if they share similar culture. Limitations of this study were recognized

Mental Health Literacy

Jorm et al. (1997) introduced the term 'Mental health literacy' (MHL) and defined it as a person's knowledge and beliefs about mental disorders, which enhances the ability to recognize specific disorders and to manage their own mental health more effectively. MHL includes several components such as (a) the ability to recognize specific disorders (b) knowledge and beliefs about risk factors and causes, (c) knowledge and beliefs about self-help interventions, (d) knowledge and beliefs about professional help available, (e) attitudes which facilitate recognition and appropriate help-seeking and (f) knowledge of how to seek mental health information (Jorm et al., 1997). Jorm (2012) reviewed over 100 published papers in this field of study and stated that most of them focused on the ability of people to identify mental illness of hypothetical people who have the mental illness.

The study of MHL had been mainly carried out in Western countries. However, in non-Western countries albeit of the fact that prevalence of common mental disorders is at least as high as the Western countries (Acharya, 2001), MHL in non-Western countries have been less actively studied. A non-systematic review of studies on MHL of non-Western countries between 1990 and 2006 identified that there is dire need for more researches on MHL in order to improve disparities in mental health care in non-Western countries (Ganasen et al., 2008). Due to its importance to study MHL in non-Western countries, recently increasing number of studies in Eastern countries and cross-cultural studies have been carried out (Gong and Furnham., 2014; Lee & Suh, 2010; Loo et al., 2012; Jorm et al., 2005c; Seo & Rhee, 2013). The result showed that each country has a different ability to recognize mental disorders and in general, Eastern countries showed poorer ability to recognize mental disorders than Western countries (Gong & Furnham., 2014; Jorm et al., 2005c; Loo et al., 2012).

Differences in ability to recognize specific mental disorders

Many studies provide compelling evidence that Eastern countries have poorer ability to recognize mental disorders than Western countries. For instance, Lee and Suh (2010) compared South Korean's ability to recognize depression and schizophrenia with Japanese and Australian population (Jorm et al., 2005c). The identification rates for depression and schizophrenia were the highest among Australians followed by Koreans and Japanese (65.3% and 41.2% for Australian, 35.2% and 33.5% for Korean, 22.6% and 17.2% for Japanese, respectively). Similarly, Loo et al (2012) carried out a cross-cultural study involving British, Hong Kong and Malaysians, with wider range of mental disorders and found the same tendency that out of nine different mental disorders described in the

study, British showed the highest recognition rate for seven mental disorders whilst Hong Kong for two mental disorders and Malaysians none. This different recognition rate of mental disorders was explained by Thakker and Ward (1998) that this was due to large difference in terms of cross-cultural expressions and conceptions of mental disorders across cultures.

Gong and Furnham's (2014) study which compared mental disorder identification rates between British, Hong Kong, Malaysian and Chinese, a large discrepancy between Hong Kong and Malaysian and between Hong Kong and Chinese were shown. Similarly, Kurumatani et al., (2004) found significant differences in the identification rate for schizophrenia between Japanese and Taiwanese as 23.3% and 34%, respectively. Therefore, it suggests that applicability of MHL of one country to other countries is limited even if the countries share similar culture.

Differences in preferred recommendation for help

There was also a cultural difference in preferred help recommendation. Greater tendency to seek self-help has been generally shown in Eastern countries whereas greater preference to seek professional help was seen in Western countries. In Loo et al's (2012) study, it was found that a higher percentage of British participants endorsed professional help for all mental disorders compared with Malaysian and Hong Kong participants while more Malaysian and Hong Kong participants endorsed self-help and social support. Similarly, in a cross-cultural study in Australia and Japan, Australians believed their GP to be a major source of help, and Japanese preferred to seek help from close family or self-treatment (Jorm et al., 2005c). This may be because people from collective cultures have stigmatized belief about mental disorders that mental disorder brings shame to the family (Griffiths et al., 2006; Hsu et al., 2008; Ng, 1997). For this reason, more people avoid seeking appropriate mental health services and rely on family or cope alone. However, despite the fact that South Koreans also share the similar collective culture with Japanese, Lee and Suh (2010) found that, alike Western countries, professional help was preferred for schizophrenia and Seo and Rhee (2013) also found that psychological therapy was preferred over self-help in South Korea. This indicates that not only does culture influence knowledge about appropriate help for mental disorders but also other factors such as personal experience of mental disorder or participants' demographic factors, for instance, age and sex can influence this.

On the other hand, there was a similarity across Western and Eastern countries that they have pessimistic beliefs about drug treatments for mental disorders (Angermeyer et al, 1993; Jorm et al, 1997; Jorm et al., 2005c; Priest et al, 1996). This negative beliefs about medication may contribute

to the failure to seek medical help from psychiatrists and lack of compliance with any medication prescribed (Fischer et al, 1999). For instance, Pyne et al., (2005) found that depressed patients who have negative attitudes toward antidepressants are less likely to comply to medication treatment regimen, and less likely to benefit overall.

This study

This study was conducted in South Korea, only a limited number of studies on mental health literacy have been carried out. Despite the limited amount of research on MHL in South Korea (Lee & Suh, 2010; Seo & Rhee., 2013), the previous studies contained a problem that it has investigated only three mental disorders comprising of schizophrenia, depression and alcohol addiction. Since the two latter disorders are highly prevalent in South Korea, the results of the studies might have been an overestimation of public's MHL, leaving public's MHL on rare mental disorders unmeasured. Therefore, the aim of this study is to investigate South Korean's MHL using wider range of mental disorders such as Bulimia nervosa, Bipolar disorder, Substance addiction, Depression, Schizophrenia, OCD, ADHD, Anorexia and Social phobia and explore influential factors on Korean's MHL.

Hypothesis 1: Koreans would have poorer ability to recognise mental disorders than Western countries

Hypothesis 2: Koreans would have different ability to recognize mental disorders compared to other Eastern countries.

Hypothesis 3: Koreans would suggest professional help the most for people with mental disorders

Hypothesis 4: There would be a relationship between demographic or previous history factors and the ability to recognize mental disorders

Method

Participants

There was a total number of 253 participants, of which 95 participants were male (37.5%) and 158 participants were female (62.5%). Their ages ranged from 15 to 71 years with a mean age of 34.25 years (SD=13.185). A large number of participants were educated up to undergraduate degree level

(45.5%), followed by high-school level (equivalent to A-level; 41.5%) and middle-school level or lower (equivalent to GCSEs; 13.0%). Fifty-two participants (20.6%) had a previous history of studying psychology-related course such as psychology, psychiatry, psychoanalysis, medicine, child-care. And, 98 participants (38.7%) have read psychology-related books or magazines. In all 89 participants who reported that they had a personal contact with someone suffering a mental illness. Eleven participants reported to have had a personal experience of a mental illness but 1 of them is excluded as they reported a neurological disorder which is not a mental disorder. Of 10 participants (4%), 5 had depression, 1 had depression and social phobia, 1 had bipolar disorder, 1 had OCD, 1 had panic disorder, and 1 did not specify any illness.

Material

The questionnaire was devised in English. Thus, translation from English to Korean was completed and another translator with no psychological knowledge translated it back to English to cross-check the similarity.

Vignette identification: A questionnaire consisted of nine vignettes, describing different cases of people with various mental disorders, namely, bulimia nervosa, bipolar disorder (adapted from Furnham and Anthony 2010), substance addiction, depression (adapted from Jorm et al. 2005a), schizophrenia (adapted from Jorm et al., 2005a), OCD, ADHD (adapted from Pescosolido et al., 2008), anorexia and social phobia (adapted from Jorm et al., 2007). Since vignettes were derived from Western examples, their names and foods were modified to reflect Korean cultures, for example, altering their name as Sang-min (male) and Eun-ah (female) and dessert as several bowls of rice. Each vignette was ensued by an open-ended question which assessed identification of the problem, “what would you say is [NAME]’s main problem”. The question was derived from the question used in research by Jorm, Christensen, and Griffiths, 2005b.

Attitudes to character adjustment: Six questions (adapted from Furnham & Wineslaus, 2011) which required participants to subjectively rate vignette character adjustment to living with their mental disorders were used. These questions were devised to examine participant's perception of each vignette case's level of distress, difficulty in treating their mental disorders, happiness, success at work and satisfaction of personal life. Participant's sympathy towards each character was also examined. The Likert scale of 1 to 7 was used (1 = not at all, 7 = extremely).

Help recommendations: A rating question was used, which asked likelihood of the participant to refer the person depicted in the vignette for help if the person were a friend. An option of “none—he/she could cope alone” and a list of nine possible help options was presented, including personal teacher, friends, parents, other family members, school counsellors, GPs, psychologists/psychiatrists, books, and the Internet. The participants were asked to rate the likelihood for each option on the Likert scale (1 = not very likely, 7 = very likely).

Procedure

Ethical approval was sought and received. Participants were recruited opportunistically from public places and through personal contact in Seoul, and other cities. A number of participants were recruited through the internet from an online questionnaire form. Participants were understood that the study was on voluntary and anonymous basis, with no remuneration for participation. The response rate was approximately 81.1% with 6.7% of refusal rate and some participants (approximately 12.2%) did not complete the questionnaire due to time issues. After completing the questionnaire, where possible, participants were debriefed and the correct answers for the diagnoses were provided when asked.

Results

Vignette identification

Content analysis was used to analyse participants’ responses to open-ended questions. Responses were categorized into “correct” or “incorrect” to determine how many participants identified specific mental disorder depicted in each vignette correctly. Responses were considered to be “correct” if participants provided a correct technical term of mental disorders corresponding to each vignette. When more than one answer were provided, the label which was closest to technical terms of mental disorder was considered. All other responses were categorized into “incorrect”. To ensure the consistency of coding between raters, an interrater reliability analysis was carried out using Kappa. As a result, the interrater reliability of the raters was found to be significant (Kappa = 0.92, $p < .001$).

Insert Table 1 here

The rates of correct identification for each mental disorder were ranked from the highest to the lowest (Table 1), with substance addiction at the top (80.2%), anorexia at the bottom (10.7%). Among 8 different mental disorders, identification rates for ADHD, depression, social phobia, bulimia nervosa and bipolar disorder were two or three times higher than OCD, schizophrenia and anorexia.

The “correct” identification rate of the mental disorders were compared as a whole and between each mental disorder. The rate of correct identification of all disorders were found to be significantly different from each other, $\chi^2(8, n=2,277)=408.61, p<.001$. Comparing each disorder individually has shown that there were significant differences between each mental disorder except following disorders; bulimia nervosa and bipolar disorder, bulimia nervosa and social phobia, bulimia nervosa and depression, bulimia nervosa and ADHD, bipolar disorder and social phobia, bipolar disorder and depression, social phobia and depression, social phobia and ADHD, depression and ADHD, anorexia and OCD, anorexia and schizophrenia, and schizophrenia and OCD.

Vignette Labelling

Insert Table 2 here

Table 2 shows the mean and standard deviation (SD) for participants’ ratings for character adjustment to be living with mental disorders in each vignette and sympathy towards character in each vignette. In general, participants believed that people with mental disorders are highly distressed (all $> M=4.27$), less happy (all $< M=3.33$), less successful at work (all $< M=3.22$) and have poor personal relationship (all $< M=3.11$). Substance addiction was rated the highest in “*distress*” ($M=6.09, SD=1.50$) and “*difficulty in treating*” level ($M=5.75, SD=1.56$), but lowest in “*happiness*” ($M=2.12, SD=1.47$) and “*success at work*” level ($M=1.93, SD=1.33$). In contrast, social phobia was rated lowest on “*distress*” level ($M=4.27, SD=1.92$) and “*sympathy*” ($M=4.19, SD=1.83$) and highest on “*happiness*” level ($M=3.33, SD=1.51$). Considering the schizophrenia character, highest rating on “*sympathy*” but lowest on “*satisfaction of personal relationship*” were shown. And, anorexia had the highest rating for “*success at work*” ($M=3.22, SD=1.55$) and “*satisfaction of personal relationships*” ($M=3.11, SD=1.49$) compared to other disorders.

¹A one-way, repeated-measures ANOVA was performed to see if participant’s ratings for the adjustment of each character in the vignette to live with their mental disorder and their sympathy towards each character in the vignette were significantly different from each other. And, for each analysis, post hoc pairwise comparisons, using the Bonferroni test, were then performed to see where the significant differences lay.

¹ The normality assumption was not met with all variables. Although ANOVA is robust to violations of normality, the same data was also analyzed using the Friedman’s test (a non-parametric one-way ANOVA). The results yielded a similar significant main effect (distress: $\chi^2(8, n=253) = 332.309, p<.001$; difficulty in treating level: $\chi^2(8, n=253) = 413.810, p<.001$; sympathy: $\chi^2(8, n=253) = 55.916, p<.001$; happiness: $\chi^2(8, n=253) = 267.088, p<.001$; success at work: $\chi^2(8, n=253) = 233.012, p<.001$; satisfaction of personal relationship: $\chi^2(8, n=253) = 158.090, p<.001$)

Help recommendations

Insert Table 3 here

Table 3 shows the mean rating and SD for likelihood of suggesting help and likelihood of suggesting different types of help for each character with different mental disorders. Overall, it has been noted that participants preferred to suggest help in general (all mean > 5.33) rather than suggest to cope alone (All mean < 3.46). Among nine different types of help, the recommendation of seeking help from a psychologist/psychiatrist was rated the highest for all mental disorders, with the highest rating for “substance addiction” (M=6.24, SD=1.24) and the lowest for “social phobia” (M=5.81, SD=1.57). The rating for suggesting to cope alone was highest for social phobia (M=3.46, SD=2.23). This is confirmed by highest rating for help from books (M=4.46, SD=1.97) and friends (M=5.12, SD=1.76) and lowest rating for help from general practitioners (M=4.55, SD=2.00) and psychologist/psychiatrists (M=5.81, SD=1.97). ADHD was rated the highest for help from teachers (M=4.86, SD=1.96), parents (M=5.57, SD=1.77), other family members (M=4.74, SD=2.04) and school counsellors (M=5.21, SD=1.93). And, relatively low likelihood of suggesting help through books (All means < 4.46) and Internet (All means < 3.65) was shown for all characters with different mental disorders.

²A one-way repeated-measures ANOVA was also carried out to find out whether there was significant difference in participants’ ratings for the likelihood of suggesting help in general and recommending different sources of help between the mental disorders. And, for each analysis, post hoc pairwise comparisons, using the Bonferroni test, were then carried out to see where the significant differences lay.

Demographic and previous history factors

To examine predictors of the ability to recognize 9 different mental disorders depicted in the vignettes, multiple linear regression analysis was carried out, using the vignette identification rates

² The normality assumption was not met with all variables. Although ANOVA is robust to violations of normality, the same data was also analyzed using the Friedman’s test (a non-parametric one-way ANOVA). The results yielded a similar significant main effect (general help: $\chi^2(8, n=253) = 93.405, p < .001$; none-cope alone: $\chi^2(8, n=253) = 68.096, p < .001$; help from teacher: $\chi^2(8, n=253) = 147.568, p < .001$; help from friends: $\chi^2(8, n=253) = 51.921, p < .001$; help from parents: $\chi^2(8, n=253) = 26.282, p < .001$; help from other families: $\chi^2(8, n=253) = 26.892, p < .001$; help from school counsellors $\chi^2(8, n=253) = 29.316, p < .001$; help from GPs: $\chi^2(8, n=253) = 89.393, p < .001$; help from psychologist/psychiatrists: $\chi^2(8, n=253) = 42.863, p < .001$; reading books: $\chi^2(8, n=253) = 31.958, p < .001$; internet: $\chi^2(8, n=253) = 28.180, p < .001$)

as the dependent variable. The predictor variables in the regression were: sex, age, level of education, personal experience of mental disorders, personal contact with people with mental disorders, having psychology-related education, reading psychology-related books and watching psychology-related TV programs. All independent variables were entered simultaneously.

Insert Table 4 here

The results of the multiple linear regression analysis for the ability to recognize mental disorders are shown in Table 4. The results showed that factors significantly predicted the ability to recognize bulimia nervosa, bipolar disorder, substance addiction, depression, OCD and ADHD but not predicted the recognition of schizophrenia, anorexia and social phobia. Overall, the variance of the model in the recognition of nine different mental disorders was explained in the range from 1% to 13.8%, lowest shown for social phobia while highest for ADHD. Each predictor received significantly positive or negative regression weights or none for recognition of different mental disorders. As a result, participants who had a higher level of education were expected to have higher recognition of bipolar disorder ($\beta=.234$, $p<.001$), substance addiction ($\beta=.197$, $p=.002$) and depression ($\beta=.216$, $p=.001$). And, participants who had a psychology-related education were expected to have higher recognition of schizophrenia ($\beta=.143$, $p=.049$) and ADHD ($\beta=.180$, $p=.009$). Female participants were expected to have higher recognition of bulimia nervosa ($\beta=.250$, $p<.001$) and depression ($\beta=.132$, $p=.047$). In terms of age, significant negative regression were shown, indicating younger participants were expected to have higher recognition of depression ($\beta=-.169$, $p=.010$) and ADHD ($\beta=-.259$, $p<.001$). Whilst participants who had personal contact with people with mental disorders were expected to have higher recognition of substance addiction ($\beta=.131$, $p=.042$), participants who personally experienced a mental illness were not expected for the recognition of any mental disorders. Similarly, reading psychology-related books did not significantly contribute to the multiple regression models.

Discussion

Vignette identification

Figure 1 shows that four out of six mental disorders were best recognized by British. The differences in identification rates for OCD, schizophrenia, depression and ADHD between British and South

Korean were 60%, 35%, 30%, 20%, respectively. In contrast, social phobia and bipolar disorder were recognized the most by South Koreans. Among the Asian countries, many differences were found; for example, in the case of social phobia, about 30% of Korean participants recognized social phobia whereas less than 5% of Malaysian participants recognized it. Similarly, about 65% of Hong Kong participants recognized depression whilst about 35% of Korean participants and 25% of Chinese recognized it. Therefore, this result confirmed Hypothesis 2.

The highest recognition of social phobia and bipolar disorder found in Korean participants may be because of the high number of young people who are addicted to the Internet (Kim et al., 2006). Weinstein et al., (2015) found that high frequency of internet use, particularly for computer games and social networks is positively correlated to the likelihood of having social anxiety, which is similar to social phobia. Secondly, Koreans are generally taught to not express their emotions (Kim, 1985; Kim, 1994). However, bipolar disorder has a characteristic of unpredictable changes in mood from hypomanic to depressive mood. Since a person with a bipolar disorder deviates Korean's social norms, they are more likely to be identified, hence explaining the highest identification rate for bipolar disorder in Korean population.

Vignette identification

The high identification rate for substance (drug) addiction (see Table 1) may be explained by high prevalence of other types of addiction, especially internet (Kim et al., 2006), drinking (Cho et al., 2010) and smoking (OECD, 2012). Although the prevalence of, and exposure to, drug addicts is very low in Korea, exposure to addiction in general has increased awareness of major symptoms of addiction.

Confucianism culture in South Korea which puts great emphasis on education (Moon, 2011) may explain the second highest identification rate for ADHD (see Table 1). In addition, a media campaign and public education campaigns on improving public's awareness of ADHD, for example, "An ADHD awareness day" were held in 2004 and 2005. This campaigns contributed to improve public's knowledge about ADHD (Cho et al., 2006; National Human Rights Commission [online]), which in turn, explains high identification of ADHD found in this study.

In Korea, eating disorders are highly prevalent and exists in 8.5% of adult population (Lee et al., 1998; Hwang, 2009). This is well reflected on high identification rate of bulimia nervosa (30.8%) compared to another study done by Mond and Hay (2008) in which most participants were Westerners

(over 90%) but only 11.7% of identification rate was found. However, most participants could not distinguish bulimia nervosa from anorexia.

Low identification rate for OCD (14.6%) may be attributed to a lot of participants mislabelling OCD as a *mysophobia*. The mislabelling of OCD as *mysophobia* may be due to frequent media coverage of *mysophobia* which is a specific type of OCD with cleanliness. Therefore, participants might overgeneralize *mysophobia* for OCD rather than the other way around.

In contrast, the psychiatric term, 'schizophrenia' is rarely covered in the media, possibly lowering the ability to recognize schizophrenia (14.2%). Although there is no statistical evidence, this phenomenon suggests that the term which is more familiar to lay people and frequently used in everyday language including media, is more likely to be identified by lay people (Furnham & Wincelhaus, 2011).

In this study, substance addiction which was considered to be the most severe mental disorder, was rated the highest for likelihood of suggesting professional help (see table 3). On the other hand, social phobia which was considered to be the least distressing and happiest mental disorder, were rated the least for seeking professional help, but rated the highest for no help or non-professional help such as books, internets and friend's help.

Overall, a psychologist/psychiatrist help was most preferred for all mental disorders (see table 3), therefore, it confirms hypothesis 3. This is contrary to previous studies which found an opposite patterns from other Asian countries where professional help was less preferred (Loo et al., 2012; Loo and Furnham, 2012; Jorm et al., 2005c). It might be a reflection of fast economic development and westernization in South Korea, which in turn, change their awareness of professional help quickly.

However, although the results indicate that participants preferred suggesting help from a psychologist/psychiatrist, their actual help-seeking behavior can be different in most of the cases. A stigma towards mental disorders in Korean culture, for example, thinking that mental illness is a personal issue (An et al., 2007), personal weakness (Turvey et al., 2012) and shame (Jang et al., 2007) may contribute to the inconsistency between their perception of professional help and actual behavior. This is likely to make people reluctant to seek a professional help even though they perceive a professional help as the best help option. Another explanation of inconsistency is that actual help-seeking behavior can be influenced by several factors such as cost of therapy and availability of mental health services.

The help from parents was also perceived relatively high (see table 3). This is in line with Lee and Suh's (2010) study in which Korean participants perceived family help the highest. Korean's culture which emphasizes interdependence in family (Kim and Choi., 1994) may account for this phenomena. Additionally, stigma on mental disorder predominating in Korean society may lead people to avoid telling their problem to others which, in turn, lead them to seek help from their families.

Furthermore, considering a GP as less helpful than parents' and psychiatric/psychologist's help is consistent with Lee and Suh (2010) which found low understanding of effectiveness of GPs in South Korea. However, different tendency was shown in Western countries, valuing help from GPs the high. Therefore, it suggests that the type of professional help recommendation is largely influenced by the health care system.

Demographic and previous history factors

Overall, level of education and having psychology-related education more specifically seems to be the best predictor of the ability to recognize mental disorders. This is supported by a previous finding that having qualifications lower than bachelor's level were associated with significantly lower mental health literacy (Seo & Rhee., 2013) and individuals who had a psychological or psychiatric education were more likely to correctly label depicted mental disorders (Furnham et al., 2009). This implies that psychology-related subjects enhance individual's knowledge of mental disorders effectively and imposes the importance of educating publics about mental disorders.

Younger ages was also found to be a significant predictor of high recognition rate for depression and ADHD. This result might be gained because ADHD is a disorder which is more prevalent among young individuals. The higher recognition of bulimia nervosa and depression predicted by female sex can be explained by the fact that those mental disorders are more prevalent among females than males. Many studies have shown that the prevalence of depression (Weissman et al., 1993) and bulimia nervosa (Garfinkel et al., 1995) is higher in females than males. This could be because females are more emotionally sensitive and care more about their appearance and prefer thinness.

Reading psychology-related books seems to be unhelpful in enhancing the recognition of mental disorders and hence, mental health literacy. On the other hand, watching psychology-related TV programs enhances the recognition of OCD. It is surprising that personal experience of mental disorders did not predict the recognition of any mental disorders. This contradicts the previous

studies, in which people who have experienced mental disorder (Furnham et al., 2009) were more likely to correctly identify mental disorders.

Like all others this study had limitations. There may be an overestimation of Korean's MHL in this study. Participants were mainly from the capital city and middle-sized cities and it excluded populations in small-sized cities and villages. A previous study showed that people in urban areas have higher MHL than those from rural areas (Loo and Furnham., 2012). Furthermore, the perceived effectiveness of psychology/psychiatrist help might be possibly gained due to participants' social desirability. Since participants were briefly explained about the purpose of study which was to know South Korean's general knowledge about mental health, they may give socially desirable answers instead of their own actual opinion, for example, rating professional help rather than no help.

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Table 1. Ranking of the mental disorders “correctly” recognised.

<i>Rank</i>	<i>Mental disorder</i>	<i>“Correct” response (%)</i>
1	Substance addiction	80.2%
2	ADHD	35.2%
3	Depression	32.8%
4*	Social phobia	30.8%
4*	Bulimia nervosa	30.8%
5	Bipolar disorder	26.1%
6	OCD	14.6%
7	Schizophrenia	14.2%
8	Anorexia	10.7%

Table 2. Mean ratings of the character adjustment to living with mental disorders in each vignette

Mental disorder	Mean distress (SD)	Mean difficulty to treat (SD)	Mean sympathy (SD)	Mean happiness (SD)	Mean success at work (SD)	Mean satisfaction of personal relationships (SD)
Bulimia nervosa	5.60 (1.59)	4.79 (1.74)	4.74 (1.77)	2.29 (1.39)	2.78 (1.41)	2.71 (1.45)
Bipolar disorder	4.57 (1.84)	4.54 (1.77)	4.48 (1.78)	3.32 (1.79)	2.65 (1.44)	2.73 (1.54)
Substance addiction	<u><i>6.09 (1.50)</i></u>	<u><i>5.75 (1.56)</i></u>	4.65 (2.00)	<u>2.12 (1.47)</u>	<u>1.93 (1.33)</u>	2.27 (1.45)
Depression	4.95 (1.68)	<u>3.34 (1.82)</u>	4.66 (1.73)	2.66 (1.48)	3.05 (1.51)	2.98 (1.54)
Schizophrenia	5.42 (1.64)	4.82 (1.86)	<u><i>4.79 (1.75)</i></u>	2.41 (1.48)	2.34 (1.46)	<u>2.19 (1.33)</u>
OCD	5.12 (1.64)	4.43 (1.93)	4.28 (1.82)	2.82 (1.51)	2.99 (1.60)	2.79 (1.59)
ADHD	4.28 (1.73)	3.78 (1.86)	4.23 (1.72)	3.18 (1.49)	2.79 (1.43)	3.01 (1.58)
Anorexia	4.87 (1.87)	4.20 (1.88)	4.34 (1.80)	2.67 (1.50)	<u><i>3.22 (1.55)</i></u>	<u><i>3.11 (1.49)</i></u>
Social phobia	<u><i>4.27 (1.92)</i></u>	3.61 (1.90)	<u><i>4.19 (1.83)</i></u>	<u><i>3.33 (1.51)</i></u>	3.16 (1.60)	2.93 (1.53)
F level	43.107***	61.813***	6.455***	30.861***	30.861***	16.753***

Note. Scale: from 1 (not at all) to 7 (extremely). N = 253 for all mental disorders. Data in bold represents the ratings which is greater than 4, half of the scale. Italic and underlined figure indicates the highest ratings for each adjustments and only underlined figure indicates lowest ratings. (* = $p \leq .05$, ** = $p \leq .01$, *** = $p \leq .001$).

Table 3. Likelihood of suggesting help and source of help recommended for each mental disorders

Mental disorder	likelihood of suggesting help (SD)	Help recommendation									
		None - cope alone (SD)	Teacher (SD)	Friend (SD)	Parent (SD)	Other family member (SD)	School counsellor (SD)	GPs (SD)	Psychologist or Psychiatrist (SD)	Books (SD)	Internet (SD)
Bulimia nervosa	<u>5.94</u> (1.43)	<u>2.57</u> (1.97)	<u>3.78</u> (1.94)	4.63 (1.88)	5.37 (1.84)	<u>4.29</u> (2.04)	<u>4.71</u> (2.00)	5.09 (1.82)	6.02 (1.46)	3.95 (2.01)	3.59 (1.99)
Bipolar disorder	5.50 (1.64)	2.73 (1.93)	4.21 (1.93)	4.60 (1.92)	5.30 (1.84)	4.30 (2.00)	5.04 (1.89)	4.88 (1.99)	6.10 (1.41)	<u>3.76</u> (1.97)	3.34 (1.92)
Substance addiction	5.91 (1.70)	2.78 (2.14)	4.29 (2.10)	4.64 (2.06)	<u>5.10</u> (2.07)	4.33 (2.19)	4.88 (2.10)	<u>5.35</u> (1.94)	<u>6.24</u> (1.24)	3.89 (2.14)	3.46 (2.11)
Depression	5.66 (1.45)	2.93 (2.10)	4.76 (1.95)	4.96 (1.95)	5.43 (1.82)	4.62 (2.05)	5.12 (1.90)	4.65 (1.98)	5.87 (1.58)	4.08 (1.95)	3.31 (1.96)
Schizophrenia	5.70 (1.66)	2.75 (2.07)	4.59 (2.08)	4.81 (2.00)	5.42 (1.90)	4.58 (2.13)	4.93 (2.07)	4.82 (2.07)	6.22 (1.25)	3.93 (2.08)	<u>3.21</u> (2.07)
OCD	5.46 (1.59)	3.15 (2.17)	4.24 (2.07)	4.46 (2.01)	5.21 (1.93)	4.38 (2.09)	4.85 (1.99)	4.88 (1.99)	6.13 (1.33)	3.83 (2.04)	3.31 (1.99)
ADHD	<u>5.33</u> (1.73)	2.94 (2.06)	<u>4.86</u> (1.96)	4.68 (1.98)	<u>5.57</u> (1.77)	<u>4.74</u> (2.04)	<u>5.21</u> (1.93)	4.95 (1.94)	6.13 (1.35)	4.07 (2.04)	3.33 (2.03)
Anorexia	5.34 (1.66)	3.29 (2.17)	4.15 (2.05)	<u>4.43</u> (1.98)	5.22 (1.92)	4.38 (2.07)	4.81 (2.02)	5.19 (1.89)	6.02 (1.34)	4.12 (2.02)	3.54 (2.11)
Social phobia	5.35 (1.62)	<u>3.46</u> (2.23)	4.64 (1.93)	<u>5.12</u> (1.76)	5.23 (1.83)	4.50 (2.02)	5.13 (1.76)	<u>4.55</u> (2.00)	<u>5.81</u> (1.57)	<u>4.46</u> (1.97)	<u>3.64</u> (2.02)
F level	9.33***	9.16***	16.17***	6.43**	2.64**	3.24**	9.33***	8.57** *	4.87***	5.66***	3.35**

Note. Scale: from 1 (not very likely) to 7 (very likely), n = 253 for all mental disorders. Data in bold represents the ratings which is greater than 4, half of the scale. Italic and underlined figure indicates the highest ratings for each help recommendations and only underlined figure indicates lowest ratings. (* = p ≤ .05, ** = p ≤ .01, *** = p ≤ .001).

Table 4. Results of the multiple linear regression analysis for the ability to recognize 9 different mental disorders depicted in the vignettes

	Bulimia nervosa ($R^2 = .096$, $F(8, 244) = 3.232$, $p = .002$)		Bipolar disorders ($R^2 = .116$, $F(8, 244) = 4.001$, $p < .001$)		Substance addiction ($R^2 = .068$, $F(8, 244) = 2.224$, $p = .026$)	
predictors	β	p	β	p	β	p
Sex	<u>.250</u>	<u>.000</u>	.003	.958	.042	.537
Age	-.032	.624	.009	.895	.018	.786
Level of education	.109	.086	<u>.234</u>	<u>.000</u>	<u>.197</u>	<u>.002</u>
Experience of mental illness	.004	.946	-.052	.403	.031	.621
Personal contact	.007	.908	.058	.356	<u>.131</u>	<u>.042</u>
Psychology-related education	.004	.949	.112	.106	.030	.668
Reading books	.084	.247	.110	.161	-.087	.235
Watching TV programs	-.010	-.152	.042	.507	.038	.560
	Depression ($R^2 = .100$, $F(8, 244) = 3.388$, $p = .001$)		Schizophrenia ($R^2 = .40$, $F(8, 244) = 1.266$, $p = .262$)		OCD ($R^2 = .98$, $F(8, 244) = 3.322$, $p = .001$)	
predictors	β	p	β	p	β	p
Sex	<u>.132</u>	<u>.047</u>	.005	.945	-.001	.988
Age	<u>-.169</u>	<u>.010</u>	.052	.439	.015	.817
Level of education	-.075	.236	.022	.740	<u>.216</u>	<u>.001</u>
Experience of mental illness	.112	.073	-.042	.515	.014	.822
Personal contact	.017	.785	.039	.552	-.038	.551
Psychology-related education	.101	.147	<u>.143</u>	<u>.049</u>	.026	.714
Reading books	.094	.192	-.127	.088	.078	.279
Watching TV programs	-.034	.597	.113	.085	<u>.185</u>	<u>.004</u>
	ADHD ($R^2 = .138$, $F(8, 244) = 4.880$, $p < .001$)		Anorexia ($R^2 = .046$, $F(8, 244) = 1.468$, $p = .170$)		Social phobia ($R^2 = .010$, $F(8, 244) = .314$, $p = .960$)	
predictors	β	p	β	p	β	p
Sex	.059	.364	.049	.471	.031	.659

Age	<u>-.259</u>	<u>.000</u>	-.025	.712	.030	.659
Level of education	-.017	.780	.040	.533	.019	.776
Experience of mental illness	.038	.535	.037	.568	.036	.588
Personal contact	.097	.116	.072	.268	-.006	.929
Psychology-related education	<u>.180</u>	<u>.009</u>	.140	.052	-.012	.874
Reading books	.031	.663	.032	.670	-.010	.899
Watching TV programs	.009	.886	-.070	.285	.072	.283

Note. All N=253. Underlined figure indicates the significant predictors. Sex (0=male, 1=female). Age (1=10-19, 2=20-29, 3=30-39, 4=40-49, 5=50-59, 6= over 60). Level of education (1=up to secondary school, 2=up to high school, 3=over bachelor degree). Experience of mental illness (0=No, 1=Yes). Personal contact with someone suffering mental illness (0=No, 1=Yes). Having psychology-related education (0=No, 1=Yes). Reading psychology-related books (0=No, 1=Yes). Watching psychology-related TV programs (0=No, 1=Yes)

Figure 1. Percentage of participants who correctly identified the problem in each vignette.

