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Korean adults' beliefs about and social distance toward attention-deficit hyperactivity disorder, Tourette syndrome, and autism spectrum disorder

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ABSTRACT

Given the scarcity of studies examining public beliefs regarding multiple neurodevelopmental disorders, this study compared lay beliefs regarding the etiology of attention-deficit hyperactivity disorder (ADHD), Tourette syndrome (TS), and autism spectrum disorder (ASD), and attitudes toward individuals with the disorders. We recruited 673 participants aged 20–64 years via an online panel survey in South Korea. Participants completed questionnaires regarding perceived causation of each disorder. Preferred social distance from people with the disorders was measured using a modified version of the Bogardus Social Distance Scale. Four causal factors were revealed: dietary/physical, social-environmental, biological, and volitive/religious. ADHD causes were considered more social-environmental relative to TS and ASD causes, while ASD causes were considered more dietary/physical and biological relative to ADHD and TS causes. Preferred social distances for ASD and TS were the highest and lowest, respectively. Greater social distance from individuals with ADHD and TS was associated with older age; having close family members, relatives, or friends with the disorder; and beliefs regarding biological etiology. Greater social distance from individuals with ASD was associated with beliefs regarding biological etiology. Beliefs regarding ADHD, TS, and ASD causes and attitudes toward the disorders differed, and beliefs regarding etiology affected preferred social distance.

1. Introduction

The Korean media recently showed mothers of children with disabilities kneeling before other residents to appeal for their consent to build a special education school in their neighborhood. The residents were against the school, as they were concerned that it would reduce the value of their houses (Chang, 2017). This issue demonstrated the stigma and social exclusion that children with disabilities and their families face in Korean society. Negative social attitudes are particularly strong toward those with mental, rather than physical, illnesses with more blaming view and perception of unpredictability and negative outcomes, albeit variations between diagnoses (Socall and Holtgraves, 1992; Corrigan et al., 2000). Given the paucity of research examining the Korean public's attitudes toward people, especially children, with mental illnesses (Jang et al., 2012), this current study places particular focus on Korean adults' general beliefs about and the social distance shown towards children with neurodevelopmental disorders, specifically attention-deficit hyperactivity disorder (ADHD). As social attitudes are closely associated with causal attribution of mental illness (Phelan, 2005; Martin et al., 2007), research is also required to examine the beliefs that laypersons hold (i.e., lay beliefs) without any specific training or experience in mental health subjects regarding the causes of such disorders and their association with preferred social distance from individuals with these disorders.

Lay beliefs regarding causes of mental disorders play a key role in shaping cognitive and behavioral responses to mental illness (Jorm, 2000). Beliefs regarding etiology are closely associated with treatment-related behavior including treatment seeking, adherence, and outcomes (Pham et al., 2009; Jorm, 2000; Razali et al., 1996). For instance, patients who attribute their mental illness to supernatural forces are likely to use traditional healers and exhibit poor drug compliance (Razali et al., 1996), while those who attribute their illness to biological factors are likely to seek biological treatment such as medication (Pham et al., 2009; Kuppin and Carpiano, 2008).

The influence of the public's beliefs regarding causes of mental disorders on social attitudes toward patients with those disorders is somewhat complex. Some studies showed that people who attributed mental illness to uncontrollable, external issues, such as biological and genetic factors, were more willing to interact with patients with mental illness, relative to those who attributed mental illness to personal factors such as moral failing or poor character (Martin et al., 2000; Martin et al., 2007). In contrast, some studies reported that genetic and

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biological attribution was associated with perceived dangerousness and defectiveness and the maintenance of greater social distance from patients and their siblings (Corrigan and Watson, 2004; Phelan, 2002, 2005; Lam et al., 2005; Pescosolido et al., 2010).

Public social attitudes and lay beliefs can be particularly significant for neurodevelopmental disorders, a group of conditions characterized by developmental deficits that impairs personal, social, academic, or occupational functioning (American Psychiatric Association, 2013). As neurodevelopmental disorders typically appear early in development (American Psychiatric Association, 2013), how adults, including parents, teachers, and neighbors, understand and react to a child's symptoms can have a significant impact on crucial decision-making about treating the child (Peris et al., 2008; Stiffman et al., 2004) as well as the children's perception of one's own or one's peers' symptoms (Hinshaw, 2005; Malli et al., 2016), both of which can largely influence the child's prognosis and adaptation outcomes. Previous research has demonstrated laypeople's poor recognition of the etiology or treatment of children's neurodevelopmental disorders (Furnham and Sarwar, 2011; Mitchell and Locke, 2014; Malli et al., 2016). Furthermore, some studies showed biased beliefs and negative social attitudes toward young people with mental disorders. For instance, one study reported that children's views regarding mental illnesses (e.g., depression and ADHD) were more moralistic relative to those regarding physical illnesses (i.e., asthma);in addition, they exhibited a strong tendency toward blaming peers with mental disorders and attributed their illness to personal faults such as substance abuse or lack of effort (Coleman et al., 2009). Previous research has also shown that the public exhibited unfavorable social attitudes toward children with neurodevelopmental disorders such as ADHD and Tourette's Syndrome (TS) (Malli et al., 2016; Paulson et al., 2005). Especially in countries with poorer public mental health awareness, negative social attitudes toward neurodevelopmental disorders may be more serious. For instance, a recent focus-group study conducted in Kenya noted that parents of children with autism reported social isolation and rejection from community members as one of the major challenges they suffer from, largely arising from the misconceptions and beliefs about the disease, including spiritual causal attributions (Kamau, 2017).

Although lay beliefs and social attitudes toward patients vary considerably according to mental disorder (Furnham and Buck, 2003), to our knowledge, few studies have compared lay beliefs regarding the causes of multiple neurodevelopmental disorders or examined their influence on social attitudes, especially in Asian society. This study particularly examined and compared Korean adults' causal beliefs about and social distance toward three relatively widely known neurodevelopmental disorders: ADHD, manifested by persistent pattern of inattention or hyperactivity-impulsivity; TS manifested by a sudden, recurrent, nonrhythmic motor movement or vocalization; and autism spectrum disorder (ASD) manifested by persistent deficits in social communication and restricted and repetitive pattern of behavior, interests, or activities. First, what beliefs do Korean adults retain about the causes of each disorder? For this question, we examined the factor structure of participants' responses to causal beliefs and their endorsement of causal factors across three disorders. Second, how different are the participants' causal beliefs about each of the three disorders? For this question, we tested the statistical difference in mean scores for causal factors between ADHD, TS, and ASD. Third, how different is the preferred social distance shown toward children for each disorder? For this question, we examined and compared participants' social distance towards three disorders. Fourth, what are the factors that are significantly associated with high social distance from children with each disorder? For this question, we examined the association of high social distance with participants' sociodemographic features as well as their causal belief.

2. Methods

2.1. Participants

In total, 673 Korean adults (337 men and 336 women) aged between 20 and 64 years (mean age: 42.77 ± 12.03 years) completed an online survey in September 2017. An online research service that operates its own consumer panel site (www. invight.co.kr) was used to recruit participants. Quotas were employed to reflect the population's age distribution. This service sent an email containing invitations to participate in the study to a random pool of potential participants who had completed at least one survey within the preceding year to increase the response rate. Of the 12,976 individuals who received the invitation email, 673 completed the questionnaires. Participants who completed all questionnaires received online credits equal to USD $1.40 in exchange for 20 min of survey participation. A brief description of the study was provided on the survey webpage. If participants consented to participate, they began the survey by clicking a "participate" button. No identifying information was obtained. The study was reviewed and approved by the institutional review board at the National Center for Mental Health (No.116271-2017-38).

2.2. Materials

2.2.1. Sociodemographic characteristics

Information regarding age, sex, socioeconomic status, education level, and religion were collected. In addition, participants were asked whether they had a family member or friend with ADHD, tics/TS, or ASD.

2.2.2. Causal attribution

Participants were first provided with a vignette describing a typical case of a child displaying symptoms (Brown, 2017) that met the diagnostic criteria for each disorder (ADHD, TS, and ASD) in the *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition* (DSM-5) (American Psychiatric Association, 2013) and ICD-10 (World Health Organization, 1992). After reading the vignette, they were informed that the child in the vignette had ADHD, TS, or ASD and provided a brief definition of each diagnosis. Participants' causal attribution for ADHD, TS, and ASD was then assessed using a 15-item questionnaire pertaining to the possible causes of each disorder. The list of causes was derived from previous literature and modified (Coleman et al., 2009; Jorm et al., 2005; Table 1). Participants were asked to indicate whether they attributed the disorders to each potential cause, via responses of "yes" (=1) or "no" (=0).

2.2.3. Social distance from people with mental illness

Participants' attitudes toward people with ADHD, TS, and ASD were measured via the assessment of their acceptance of social relationships with individuals with the disorders. They completed a modified version of the Bogardus Social Distance Scale (Bogardus, 1925), which includes six items representing the following social relationships: marriage to participants' close family members, marriage to participants' relatives, friendship, working together or studying in the same class, living on the same street, and living in the same village. The participants were asked to indicate whether they would accept each social relationship ("accept" = 1, "do not accept" = 0). In accordance with the method used in previous studies (Stuart and Arboleda-Flórez, 2001; Adewuya and Makanjuola, 2008), participants' responses were categorized according to the number of items accepted. The preferred social distance for participants who accepted all items was categorized as low; that for participants who accepted all but one item was categorized as moderate; and that for participants who would not accept two or more items was categorized as high. Participants were then assigned to the high or low-to-moderate social distance group for the logistic regression analysis.