



Dissociative disorders in acute psychiatric inpatients in Taiwan

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ABSTRACT

Dissociative disorders have been documented to be common psychiatric disorders which can be detected reliably with standardized diagnostic instruments in North American and European psychiatric inpatients and outpatients (20.6% and 18.4%, respectively). However, there are concerns about their cross-cultural manifestations as an apparently low prevalence rate has been reported in East Asian inpatients and outpatients (1.7% and 4.9%, respectively). It is unknown whether the clinical profile of dissociative disorders in terms of their core symptomatic clusters, associated comorbid disorders, and environmental risk factors that has emerged in western clinical populations can also be found in non-western clinical populations. A standardized structured interview for DSM-IV dissociative disorders, post-traumatic stress disorder, and a history of interpersonal victimization was administered in a sample of Taiwanese acute psychiatric inpatients. Our results showed that 19.5% of our participants met criteria for a DSM-IV dissociative disorder, mostly dissociative disorder not otherwise specified. More importantly, the western clinical profile of dissociative disorders also characterized our patients, including a poly-symptomatic presentation and a history of interpersonal trauma in both childhood and adulthood. Our results lend support to the conclusion that cross-cultural manifestations of dissociative pathology in East Asia are similar to those in North America and Europe.

1. Introduction

Dissociation, a disruption in the usually integrated functions of consciousness, memory, identity, or perception (*DSM-IV-TR*; American Psychiatry Association, 2000), has been recognized for more than one hundred years as a condition which can interfere severely with daily function and psychological health (Putnam, 1989; Van der Kolk and Van der Hart, 1989). Five dissociative disorders were listed in the *DSM-IV*, including dissociative amnesia (DA), dissociative fugue (DF), depersonalization disorder (DPD), dissociative identity disorder (DID), and dissociative disorder not otherwise specified (DDNOS). Another, dissociative trance disorder (DTD), was included as an example of DDNOS and also in the appendix of the *DSM-IV* as a disorder requiring further study. There are some critical revisions to the dissociative disorders in the *DSM-5* (Spiegel et al., 2011, 2013; American Psychiatry Association, 2013). Fugue is regarded as a condition related to autobiographical memory deficits and reclassified as a subtype of DA. Pathological possession trance, viewed as a

component of DTD in the *DSM-IV*, is reclassified as a cultural variant of DID in the *DSM-5*. Of note, conversion disorder has not been placed under the umbrella of dissociative disorder though the dissociative disruption of motor control and bodily representation has been recognized as a defining aspect of dissociation in the *DSM-5*.

Several studies have investigated the prevalence rates of dissociative disorders in psychiatric inpatients and outpatients (See Table 1 for a summary). Based on standardized structured interview schedules, 20.6% of psychiatric inpatients (Ross et al., 1991, 2002; Saxe et al., 1993; Latz et al., 1995; Modestin et al., 1996; Lussier et al., 1997; Tutkun et al., 1998; Friedl and Draijer, 2000; Gast et al., 2001; Ginzburg et al., 2010) and 18.4% of outpatients in North American and Europe were diagnosed as having a dissociative disorder (Şar et al., 2000; Foote et al., 2006; Mueller-Pfeiffer et al., 2013). Some studies compared the results derived from a structured interview with clinical judgment by an expert on dissociation who was blind to the standardized interview (Ross et al., 1991; Tutkun et al., 1998; Akyüz et al., 1999; Şar et al., 2007). Fifty-seven out of fifty-nine patients with an

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Table 1

Means and ranges of the prevalence rates (in percentages) of *DSM-IV* dissociative disorders in the clinical and nonclinical populations of the past western studies.

	Inpatient		Outpatient		Citizens	
	M	Range	M	Range	M	Range
Dissociative amnesia	0.4	0.0–13.4	2.3	0.0–9.8	3.6	0.9–7.3
Dissociative fugue	0.0	0.0–0.0	0.4	0.0–0.6	0.1	0.0–0.2
Depersonalization disorder	1.4	0.0–4.5	4.5	4.4–4.9	1.0	0.2–2.4
Dissociative identity disorder	5.0	0.5–12.0	4.9	4.0–7.5	1.1	0.0–3.1
Dissociative disorder NOS	8.3	1.4–19.4	7.4	6.3–8.5	3.5	0.2–8.3
Any dissociative disorders	20.6	4.3–58.3	18.4	12.0–29.3	8.9	1.7–18.3

Note: NOS = Not Otherwise Specified. Psychiatric inpatients from Ross et al. (1991), Saxe et al. (1993), Latz et al. (1995), Modestin et al. (1996), Lussier et al. (1997), Gast et al. (2001), Tutkun et al. (1998), Friedl and Draijer (2000), Ross et al. (2002), and Ginzburg et al. (2010); psychiatric outpatients from Rifkin et al. (1998), Şar et al. (2000), Foote et al. (2006), and Mueller-Pfeiffer et al. (2013); community citizens from Ross (1991), Akyüz et al. (1999), Johnson et al. (2006), and Şar et al. (2007).

interview-based diagnosis of a dissociative disorder were cross-validated by an independent clinical judgment in one study (Ross et al., 2002). Dissociative disorders can be reliably diagnosed, at least via standardized structured interview instruments. Nevertheless, in this series of studies, 83% of patients receiving an interview-based diagnosis of a dissociative disorder did not have clinical documentation of a dissociative disorder in their medical charts (Saxe et al., 1993; Latz et al., 1995; Lussier et al., 1997; Şar et al., 2000; Foote et al., 2006; Ginzburg et al., 2010). Dissociative disorders are seemingly underestimated in clinical practice.

Under-diagnosis of dissociative disorders in clinical practice can also be found in East Asia. Though there have been case studies of dissociative disorders in East Asia patients (Chang et al., 2002; Lin et al., 2007; Wang et al., 2015), few systematic studies using standardized interview instruments have been reported. One exceptional study investigated the prevalence rates of dissociative disorders in psychiatric inpatients and outpatients in Shanghai (Xiao et al., 2006). The results reported were that 1.7% of inpatients and 4.9% of outpatients were diagnosed as having a dissociative disorder based on a standardized structured interview. These rates were considerably lower than the rates documented in the Western studies. It is unclear whether dissociative disorders are rare in Eastern societies. Or, cultures may contribute to a difference in symptomatic manifestations and associated features of dissociative disorders, such as pathological possession (Moreira-Almeida et al., 2008; Van Duijl et al., 2010).

Poly-symptomatic presentations appear to be a clinical characteristic of dissociative disorders (Spiegel et al., 2011, 2013). Dissociative disorders were commonly co-morbid with several Axis-I and Axis-II psychiatric disorders, including major depressive disorder, post-traumatic stress disorder, somatization disorder, substance abuse disorder, and borderline personality disorder (Ellason et al., 1996). Symptoms often regarded as psychotic, such as hallucination and passive experience (sensation, feeling, drive, or volition that is experienced as made or influenced by others, Oyeboode, 2008), were common in patients with a dissociative disorder (Kluft, 1987; Ross et al., 1990b). An average of 6.4 and 4.8 Schneiderian first rank symptoms were documented in inpatients and outpatients with a dissociative disorder, in comparison with 1.6 and 0.1 in patients without a dissociative disorder (Tutkun et al., 1998; Şar et al., 2000).

Adverse interpersonal experiences also characterize patients with a dissociative disorder. Case series have documented that ninety-one percent of patients with DID report either sexual or physical abuse in childhood (Coons et al., 1988; Ross et al., 1989b, 1990a; Boon and Draijer, 1993). Case control studies further documented a history of traumatizing events that discriminate patients with a dissociative disorder from patients without a dissociative disorder (see Table 2

Table 2

The Prevalence rates (in percentages) of childhood interpersonal trauma in clinical (in- or out-patients) and nonclinical participants with dissociative disorders and non-dissociative comparison groups from the past western studies.

Types of early adversity	Inpatients	Outpatients	Clinical	Nonclinical	Global
Child sexual abuse					
DD	69	55	62	10	32
Non-DD	12	21	17	1	04
Child physical abuse					
DD	85	62	74	18	42
Non-DD	27	25	26	8	12
Child emotional abuse					
DD	71	72	71	22	34
Non-DD	11	11	11	8	8
Child neglect					
DD	78	83	80	53	61
Non-DD	21	17	20	29	28

Note: DD = participants with a dissociative disorder, and Non-DD = participants without dissociative disorders. Inpatients from Saxe et al. (1993), Modestin et al. (1996), and Tutkun et al. (1998); outpatients from Şar et al. (2000) and Foote et al. (2006); nonclinical citizens from Şar et al. (2007).

for a summary). In comparison with non-dissociative patients, patients with a dissociative disorder have higher rates of sexual abuse (62% versus 17%), physical abuse (74% versus 26%), and emotional abuse (71% versus 26%) in childhood (Saxe et al., 1993; Modestin et al., 1996; Tutkun et al., 1998; Şar et al., 2000; Foote et al., 2006). Using self-report scales, some studies found that patients with dissociative symptoms experience more interpersonal maltreatment in adulthood as well than patients without dissociative symptoms (Lipschitz et al., 1996; Chiu et al., 2015). In addition to these potentially traumatizing events, dissociative and non-dissociative patients may be differentiated by other childhood interpersonal adversity which is not obviously traumatizing. Risk factors pertaining to parental dysfunction (parents with substance abuse, psychiatric disorders, or chronic physical illness) and early separation were associated with dissociative symptoms in psychiatric patients in one study, for example (Draijer and Langeland, 1999). Child neglect was also more often endorsed by patients with a dissociative disorder than patients without it (Saxe et al., 1993; Modestin et al., 1996; Tutkun et al., 1998; Şar et al., 2000; Foote et al., 2006).

The goal of the present study is to investigate the frequency of dissociative disorders in a clinical sample of East Asia. Specifically, we wanted to examine the clinical profiles of patients with a clinically undiagnosed dissociative disorder in terms of phenomenological features, comorbid psychiatric disorders, and environmental risk factors, in order to investigate whether the clinical profile reported in the West can also be observed in Taiwan. Standardized interview instruments for *DSM-IV* dissociative disorders and interpersonal trauma used in the previous dissociation studies were used in order to compare our results with those from western societies. Of note, a measure for pathological trance and possession which characterizes *DSM-IV* DTD was added as pathological possession may be a cultural variant of identity alteration (Spiegel et al., 2011, 2013). If the construct of dissociation is universal, a prevalence rate and a clinical profile comparable with those found in the western studies would be expected. If this is not the case, the prevalence rate of dissociative disorders should be lower and a distinct clinical profile would be found.

2. Methods

2.1. Participants

The investigation was carried out in accordance with the latest version of the Declaration of Helsinki. The project was approved by the Institutional Review Board at the National Taiwan University Hospital. All participants were recruited from two acute wards designed to manage patients with different behavioral problems. One is for deficient reality testing or violent behaviors, mainly with psychotic disorders and bipolar affective disorder (Ward-P); the other is for mood disturbances, anxiety, somatic complaints, or eating problems (Ward-N). Patients were eligible for this study if they were admitted for a psychiatric problem (regardless of their clinical diagnosis, but excluding organic brain syndromes), stabilized after interventions, a native speaker of Mandarin Chinese, and had intact intellectual function. All participants, upon their agreement, were referred to the principal researcher by four medical teams in the two wards. The principal researcher approached the participants and explained the study to them. Written informed consent was obtained after the procedure had been fully explained.

Eighty-nine participants were approached. Of all the participants, 73% percent were female and the averages of age and education were 36 ± 12 years old and 12.8 ± 2.7 years. Primary clinical diagnoses of these participants included psychotic disorders (45%), bipolar affective disorders (26%), depressive disorders (17%), eating disorders (9%) and other diagnoses (3%). All of the primary clinical diagnoses were made by the medical teams providing clinical care according to the *DSM-IV-TR*. Two participants did not complete the interview because of their unstable mental statuses. Data from 87 participants were used in the analysis.

2.2. Instruments

2.2.1. Dissociative Disorders Interview Schedule (DDIS, Ross et al., 1989a; Ross, 1997)

The DDIS is a structured diagnostic interview that makes *DSM-IV* diagnoses of somatization disorder, major depressive disorder (MDD), borderline personality disorder (BPD), and the five dissociative disorders. In addition, it asks questions about substance abuse, secondary features of dissociative identity disorder, extrasensory/paranormal experiences, and childhood physical and sexual abuse. The DDIS has established reliability and concurrent validity with other dissociation measures and with an independent clinical judgment (Ross et al., 1991; Tutkun et al., 1998; Akyüz et al., 1999; Şar et al., 2007). Though some experts in the dissociation field have expressed concerns that the DDIS may have a higher risk of selecting false positives than another structured interview schedule (i.e., Structured Clinical Interview for *DSM-IV* Dissociative Disorders, SCID-D), there is also evidence showing fairly high agreement between the two instruments (Cohen's kappa = 0.74; Ross et al., 2002); in that study the DDIS diagnosed fewer cases of dissociative disorder than the SCID-D (40.8% vs 44.5%). In this study the psychological trauma section of the DDIS was not administered as we used another interview schedule to more comprehensively evaluate the participants' histories of interpersonal trauma in childhood and adulthood.

2.2.2. Dissociative Trance Disorder Interview Schedule (DTDIS, Ness and Ross, 2008)

The DTDIS is a structured interview which assesses DTD, listed in the Appendix B, Criteria Sets and Axes Provided for Further Study of the *DSM-IV-TR* (p. 783–785). The DTDIS can be thought of as the DTD module of the DDIS. The DTDIS makes the *DSM-IV* diagnoses of DTD and other culturally-related disorders such as Amok, Ataque de Nervios, Bebainan, Latah, and Pibloktoq.

2.2.3. PTSD Symptom Scale-Interview Version (PSS-I) (Foa et al., 1993)

The PSS-I is a semi-structured interview designed to assess current symptoms of post-traumatic stress disorder (PTSD) as defined by the *DSM-IV* criteria. The PSS-I consists of 17 items corresponding to the 17 symptoms of PTSD, and yields a total PTSD severity score as well as re-experiencing, avoidance, and arousal subscale scores. Each item consists of one brief question. Factor analysis of the PSS-I yields three factors: avoidance/arousal, numbing, and intrusion (Foa et al., 1995). The PSS-I has good psychometric properties including internal consistency, test-retest reliability, inter-rater reliability and concurrent validity.

2.2.4. Structured Trauma Interview (STI) (Draijer and Langeland, 1999)

The STI is an adapted version of an interview developed for a national survey on the prevalence and sequelae of adverse interpersonal experience. The version is modified for patients with a psychiatric disorder. It addresses childhood experiences proven to be risk factors for adulthood psychopathology (early separation from parents, parental dysfunction, parental physical aggression, sexual abuse, witnessing inter-parental violence, and other overwhelming experiences before age 16). Adulthood sexual and physical assault are addressed as well.

2.3. Procedure

All of the assessments were held individually in two interview rooms of the two wards. The entire assessment was conducted by the principal researcher (CDC), a board-certified clinical psychologist who received extensive training on dissociation and the use of these instruments and tests. As few systematic studies of dissociative disorders have been published in Taiwan, in order to clarify the phenomenological manifestations of dissociation-like behaviors and detect potential cultural variations in subjective accounts, a detailed description of each participant's subjective experience was collected for every positive response to an interview dissociation item. To cross-validate the ratings, the medical teams who were providing clinical care for the interviewed participants were consulted in order to obtain the major presenting symptoms collected during their clinical interviews. In addition, a master-level graduate student in clinical psychology listened to the recordings of the standardized structured diagnostic interviews and re-rated them. Any inconsistent rating was discussed till an agreement was reached. Third, all of the interview data including the detailed phenomenological description of dissociation-like behaviors was reevaluated by a senior psychiatrist (HGH) to confirm the diagnoses. Finally, medical records including charts and admission notes were carefully reviewed. The definitions and phraseology of standardized instruments for psychotic symptoms (the Scale for the Assessment of Positive Symptoms; Andreasen, 1984) and dissociative symptoms (the Multidimensional Inventory of Dissociation; Dell, 2006) were adopted to classify psychotic and dissociative symptoms noted in the medical records.

3. Results

In this sample, seventeen (19.5%) participants had a dissociative disorder based on the DDIS. Fifteen of the seventeen were female (88.2%). The two most common dissociative disorders were DDNOS ($n = 9$, 10.3%) and DA ($n = 5$, 5.7%). Five of the nine had a complex constellation of dissociative behaviors similar to DID but failed to meet the full criteria of this disorder (DDNOS Example 1, DDNOS-1). Three had medically unexplained loss of consciousness (DDNOS-5) and one had pathological possession trance (DDNOS-3). Three participants (3.4%) had depersonalization disorder, endorsing both depersonalization and derealization. None of the participants in this study had the

Table 3

The rates of co-morbid psychiatric disorders (in percentages) in Taiwanese patients with and without a dissociative disorder.

Co-morbid disorders	DD	Non-DD	χ^2
Post-traumatic stress disorder	56	4	19.87**
Borderline personality disorder	65	10	18.72**
Somatization disorder	53	17	8.88**
Substance abuse	41	17	4.58*
Major depressive disorder	94	72	2.98

Note: DD = patients with a dissociative disorder, and Non-DD = patients without any dissociative disorders.

* $p < 0.05$.

** $p < 0.01$.

diagnosis of DF or DID. With respect to the DTDIS, a total of 3 participants (including the one with DDNOS-3) reported pathological possession experiences which affected their socio-occupational function. However, except for the one participant meeting criteria for DDNOS-3, the other two participants denied any alternation of consciousness in which they experienced their identities as being replaced. All three participants denied having amnesia for this period of time.

Table 3 shows the rates of the comorbid psychiatric disorders for participants with and without a dissociative disorder. The group effect was examined by logistic regression analysis, with the presence of a dissociative disorder (1 = yes, or 0 = no) as an independent variable and the presence of each comorbid disorder as a dependent variable (1 = yes, or 0 = no). Significant group differences were found in four of the five psychiatric disorders. The rates of PTSD, BPD, somatization disorder, and substance abuse were higher in patients with a dissociative disorder. Regarding MDD, the rate was numerically higher in the patients with a dissociative disorder though the group difference was not significant.

Table 4 shows the results for the common features of dissociative disorders. Logistic regression analysis (for dichotomous variables) and t -tests (for continuous variables) were used respectively to examine the group effects. Patients with a dissociative disorder endorsed more amnesic and self-alteration experiences which are frequently reported by patients with DID, as well as trance, and sleepwalking. Patients with a dissociative disorder also reported more Schneiderian first rank symptoms and other unusual experiences including extra-sensory perception, possession, cult involvement, and supernatural experiences. The group effect was not significant for childhood imagery friends.

Table 5 summarizes the rates of adverse interpersonal experiences between patients with and without a dissociative disorder. Again logistic regression analysis (for dichotomous variables) and t -tests (for continuous variables) were used to examine the group effect on the

Table 4

The prevalence of dissociation-related unusual experiences in Taiwanese patients with and without a dissociative disorder.

Unusual experience	DD	Non-DD	χ^2/t
Dichotomous variables (% , χ^2)			
Sleepwalking	41	14	6.00*
Trance	71	42	4.31*
Childhood imagery friends	18	7	1.80
Frequency variables ($M \pm SD$, t)			
Amnesia and identity confusion	3.47 \pm 2.67	0.97 \pm 1.13	6.05**
Extra-sensory perception	3.53 \pm 2.12	1.72 \pm 1.61	3.90**
First rank symptoms	3.12 \pm 2.85	1.61 \pm 1.92	2.64**

Note: DD = patients with a dissociative disorder, and Non-DD = patients without any dissociative disorders.

* $p < 0.05$.

** $p < 0.01$.

Table 5

The rates of childhood and adulthood interpersonal trauma (in percentages) in Taiwanese patients with and without a dissociative disorder.

Adverse interpersonal experience	DD	Non-DD	χ^2
Childhood			
Sexual maltreatment	69	19	13.11**
Physical maltreatment	59	32	4.04*
Physical or sexual maltreatment	73	40	9.29**
Witness parental violence	53	21	5.82*
Early loss or separation	38	31	0.22
Adulthood			
Sexual maltreatment	33	10	4.93*
Physical maltreatment	67	33	4.24*
Physical or sexual maltreatment	73	36	6.35*

Note: DD = patients with a dissociative disorder, and Non-DD = patients without any dissociative disorders.

* $p < 0.05$.

** $p < 0.01$.

presence of adverse interpersonal experience. Childhood sexual and physical maltreatment were more frequent in patients with a dissociative disorder. They also endorsed more experiences of witnessing violence between parents. The group effect was not significant for separation or loss in childhood, or for risk factors pertaining to parental dysfunction [for patients with and without a dissociative disorder, $M_s=2.38$ and 2.27 , $SD = 1.50$ and 1.48 , $T=0.19$, $p > 0.80$]. Regarding adulthood trauma, the rates of sexual and physical abuse were also higher in patients with a dissociative disorder.

Finally, the medical chart and admission notes of patients with a dissociative disorder were summarized. Dissociative behaviors were noted on the chart in 53% of these patients. However, none of these patients received a clinical diagnosis of a dissociative disorder. Most of the primary diagnoses were mood disorders (47%) and psychotic disorders (41%). Positive symptoms of schizophrenia were noted in 65% of these patients. Traumatic experience was noted in 29% of them.

4. Discussion

The goal of the present study was to investigate the frequency of dissociative disorders in a Taiwanese sample of acute psychiatric inpatients. Few systematic studies using standardized diagnostic interview instruments have been conducted on dissociative disorders in East Asia societies. As the manifestations of dissociative pathology may be shaped by culture, it is unclear whether the typical profile of dissociative disorders emerging mainly from western patients can be replicated in East Asia patients. Our results showed that 19.5% of our 87 participants had a *DSM-IV* dissociative disorder based on the standardized structured interview. This number should be interpreted cautiously as complete randomization of participant recruitment and a double-blind design were not used in this study. However, our results provide a reference point for the clinical profile of dissociative disorders in psychiatric inpatients in East Asia.

The frequency of dissociative disorders in our study is close to the average rates of *DSM-IV* dissociative disorders in psychiatric inpatients from North America and Europe (Taiwan versus western countries, 19.5% and 20.6%). Similar to western findings, DDNOS (10.3% versus 8.3%), a condition comprised of multiple dissociative symptoms including amnesia, depersonalization, trance, and even identity confusion that obviously goes beyond dissociative amnesia and depersonalization disorder, was the most common type of dissociative disorder in our sample. In contrast, the *DSM-IV* criteria of DID could not be applied to any of our participants. However, at the time we were collecting our data, we became aware that there were two inpatients with a chief complaint of multiple selves; as these two participants did not participate in our study, a standardized assessment was not

undertaken for them. One might suspect that the rate of DID among psychiatric patients in Taiwan is underestimated in our study, due to pathological possession being a more common manifestation of identity alteration in Asian cultures (Spiegel et al., 2011, 2013). Nevertheless, possession was not endorsed by the five patients with DDNOS Example1. The only participant who had pathological possession trance (i.e., the trance and possession type of DTD) did not have amnesia, which is required for the diagnosis of DID.

Consistent with results from western studies (Ellason et al., 1996; Johnson et al., 2006), a similar profile of comorbid psychiatric disorders was found in Taiwanese patients with a dissociative disorder. PTSD, BPD, and somatization disorder were more prevalent in patients with a dissociative disorder than non-dissociative patients. The link to PTSD and BPD reflected that dissociation is a shared feature among these disorders (Knefel et al., 2016), though it should be noted that overlap between the various disorders does not demonstrate that the core problem of these disorders concerns dissociation (e.g., BPD). It remains an open question for future studies to clarify the conceptual linkage between these disorders. The association with somatization disorder also supports the notion that as well as consciousness, perception, memory and identity the dissociative disruption can also happen to sensory and motor function (i.e., somatoform dissociation; Nijenhuis, 2009). Schneiderian first rank symptoms also characterized Taiwanese patients with dissociative disorders in comparison with non-dissociative patients. Though the group difference for MDD was not significant, most of our patients with a dissociative disorder (97%) endorsed MDD. Depression seems to be a common, but not specific, psychiatric comorbidity of dissociative disorders in Taiwan.

An association between dissociative disorders and interpersonal trauma was also found. The incidence of witnessing parental violence, sexual maltreatment, and physical maltreatment in childhood was higher in patients with a dissociative disorder. Of note, adulthood trauma was also commonly reported by our patients with a dissociative disorder. The elevated rate of both childhood and adulthood trauma supports the view that cumulative traumatic experience may be a key factor in the genesis of dissociation (Chiu et al., 2015). It has been hypothesized that the link between trauma and dissociation may be an artifact of improperly used therapeutic techniques (e.g., hypnosis) and the mass media (Spanos, 1994; Frankel, 1995). This socio-cognitive model of dissociative disorders seems unlikely to explain the link between dissociation and trauma in this study as neither of these factors are common in Chinese culture (also see Xiao et al., 2006). This finding is congruent with other psychological (Vissia et al., 2016) and psychobiological studies (Reinders et al., 2016) which falsify the socio-cognitive model of dissociative disorders.

The records in the medical charts showed that dissociation-like behaviors and dissociative symptoms were noted in half of these patients by the clinical staff. Dissociation can be readily detected by some clinicians in Taiwan, it appears. However, dissociative disorders were not diagnosed in any of these patients. Instead, psychotic symptoms and mood lability accounted for their clinical diagnoses. This finding is consistent with the idea that the common poly-symptomatic presentation of dissociative disorders may not be clearly delineated in the current diagnostic manual (Spiegel et al., 2011, 2013). More importantly, it is still an open question whether the recognition of dissociative pathology, without a dissociative disorder diagnosis being made, benefits the clinical management of patients with severe mood or psychotic disorders. Studies in anxiety and personality disorders have suggested that evidence-based treatment programs which are ordinarily effective for their target disorders do not work in patients comorbid with dissociation (Michelson et al., 1998; Rufer et al., 2006; Spitzer et al., 2007; Kleindienst et al., 2011). The treatment implications of either failing to make or making a dissociative disorder diagnosis in such populations require further research.

As anticipated, there were inconsistencies in our results when we compared them to the previous studies of dissociative disorders. First,

the rate of dissociative disorders in this study is considerably higher than the rate found in psychiatric inpatients in Shanghai (Xiao et al., 2006). The possibility that this inconsistency results from a methodological difference was excluded by our methodology because the same diagnostic instrument was used in both studies. The rates of dissociative disorders in western inpatient studies vary in different studies (from 4.3 to 58.3), hence, more studies are needed to find a more precise prevalence rate of dissociative disorders in both western and East Asia psychiatric patients. Second, possession experiences were endorsed by three participants. However, two of them denied trance, and all three participants denied having amnesia. More systematic studies should be conducted to examine the frequency and dissociative nature of possession experiences in Asia. Third, we did not find that dissociative disorders correlated with early loss or separation and risk factors pertaining to parental dysfunction (Drajer and Langeland, 1999). In fact, similar findings were also noted in another study using a dimensional approach to measuring parental dysfunction, interpersonal trauma, and dissociation (Chiu et al., 2015). Cumulative trauma, rather than parental dysfunction, made a unique contribution to dissociation when general psychopathology was controlled. This result suggested that a neglectful parental style may not be a factor in the genesis of dissociative disorders in Taiwanese patients.

In conclusion, using standardized diagnostic interviews, we found that one fifth of our participants had a dissociative disorder. Taiwanese patients with a dissociative disorder had a clinical profile similar to that seen in western societies, including a poly-symptomatic presentation and a history of interpersonal trauma. Our findings support the cross-cultural validity of the clinical profiles of dissociative disorders.

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