

EFFECT OF CULTURE AND ENVIRONMENT ON THE
PHENOMENOLOGY OF DELUSIONS AND HALLUCINATIONS

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ABSTRACT

Background: The present study was conducted to compare the influence of culture and immediate environment on the phenomenology of schizophrenic symptoms by examining the actual content of delusions and hallucinations in three groups of schizophrenic patients.

Method: Pakistanis living in Britain (BP; $N = 53$), Pakistanis in Pakistan (PP; $N = 98$) and British White (BW; $N = 50$). The content of the patients' delusions and hallucinations was obtained from medical records and key-workers' reports from All-Saints Hospital, Birmingham and two psychiatric units in Lahore. All references to delusions and hallucinations were coded in accordance with the classification scheme developed for the Present State Examination (Wing *et al.*, 1974).

Results: Comparisons indicated greater differences in phenomenology of delusions and hallucinations between the Pakistani pair (BP vs. PP) than between the British groups (BP vs. BW). The findings suggested a stronger influence of the immediate environment on the pathogenesis of delusions and hallucinations.

Conclusions: The results are discussed with reference to the cultural and religious values of the ethnic groups.

INTRODUCTION

Although there may well be a biochemical or neuroanatomical basis for the occurrence of psychotic phenomena, it is commonly assumed that culture and environment are major influences on the phenomenology of mental illness. This is particularly likely to be the case for psychotic hallucinations and delusions where, by definition, there is no immediate reality basis for the patients' perceptions and beliefs. Manschreck (1995) has suggested that in order adequately to understand the pathogenesis of delusions, several important facts, like a person's cultural background, learning history and experience, need to be taken into account. Research has generally supported this assumption. It has several times been reported, for example, that visual hallucinations are more common in non-western cultures than in European cultures where auditory hallucinations dominate the phenomenology of psychoses (Ndeti & Vadher, 1984b; Sartorius *et al.*, 1986), although it appears that visual hallucinations were relatively more frequent in the West in the past (Kroll & Bachrach, 1982). It is suggested that in societies and epochs, where 'visions' are given positive religious

or social connotations, visual hallucinations are more frequent than where 'visions' are not considered so positively (Al-Issa, 1995).

A considerable amount of work conducted in cross-cultural settings has provided evidence that the types of delusions and hallucinations reflect both the place and time in which the person is living and the theme of the same symptoms reflects the patient's cultural milieu. In a study comparing the content of schizophrenic delusions of Korean and Chinese patients, Kim *et al.* (1993) were able to relate the many differences they found to sociocultural and political differences in the experience of the two groups. For example, a predominance of family themes in the delusions of Korean patients was explained by reference to the stronger ties to the traditional extended family in Korean culture compared to modern Chinese culture where family ties have been systematically weakened by the State. Tateyama *et al.* (1993) compared delusions found in matched groups of schizophrenic patients in Japan and Germany. Many of the differences they found (e.g. greater frequency of delusions of extreme guilt and sinfulness in the German sample) were explained by reference to differing concepts of self in the two cultures. In Germany the individually oriented self is the cultural norm (hence a propensity to guilt), whereas in Japan there is a more group-oriented basis to the self-concept.

So far, very few studies have compared the delusions and hallucinations of South-Asians with those of western patients. The majority of these studies have made comparisons either by studying cross-cultural populations in a western hospital setting (Ndeti & Vadher, 1984a, 1984b) or by comparing their results with findings reported from studies carried out in other countries (Kala & Wig, 1982; Ndeti & Singh, 1983).

The findings obtained by such studies lack ecological validity. The first type of studies is generally conducted to ascertain the relative importance of culture and environment on target behaviour in multiple groups. However, such work is unable to show the effect of culture in its pure form in the case of immigrant groups. The latter studies are problematic because of the following: (1) methodological differences between the studies compared; (2) the studies are conducted at different times.

Having access to groups of patients from two quite different cultural backgrounds but living in similar conditions enables a comparison of the influence of culture and immediate environment on the phenomenology of psychoses to be made. The addition of a group of patients who have stayed in their original cultural context strengthens the design still further. The current study was designed to compare the content of delusions and hallucinations in groups of native White English patients with both Pakistani patients living in England and with a group of patients from Lahore, Pakistan. The design of the study allowed comparing the influence of culture and immediate environment on the phenomenology of schizophrenic symptoms. There is evidence that people endeavour to keep their culture intact after migrating to other cultures. Delusion of ghost possession, which is uncommon in Britain but common in South-Asian countries, has also been reported in the Asians living in the UK (Hale & Pinninti, 1994). It was hypothesized, however, that although the background cultural factors will play a substantial part as the context in determining the content of delusions and hallucinations in British-Pakistanis, their delusions and hallucinations would have many shared themes with those of native Whites due to their similar environmental experiences. Similarly, the phenomenology of delusions in Pakistani patients will be different from that of British-Pakistanis because of different environmental exposures.

METHOD

Medical records of British psychiatric patients who were receiving treatment at All Saints Hospital in Birmingham, Britain were searched. To be included in the study, however, patients had to have a diagnosis of psychosis and be either of Pakistani or White British origin. All Saints Hospital was chosen as its catchment area contains many Pakistani and other families of South-Asian origin. The data for Pakistani patients were collected from two psychiatric units in Lahore, Pakistan: Government Psychiatric Hospital and Fountain House. The content of delusions and hallucinations was extracted from the medical and key-worker reports. All references to delusions and hallucinations were coded according to the classification scheme developed for the Present State Examination (Wing *et al.*, 1974). In some cases, key-workers of the concerned psychiatric unit were contacted for more information. Only those cases were selected for the study who had experienced organized delusions and hallucinations. In total, 350 case notes from Birmingham and 210 from Lahore were examined, out of which 201 patients satisfied all inclusion criteria. In all, the notes of 98 patients at Lahore, 50 BW and 53 BP patients at All Saints were examined. However, as many patients had more than one theme under different categories of delusions and hallucinations, and these were all coded separately, the number of data points exceeds the total of 201 patients in many categories.

Delusional explanations about the delusions of control, reference and persecution are coded under the PSE categories 79 (paranormal) and 80 (physical). It was revealed during the case reviewing process that the delusions were also related to human beings. Considering this, an additional category, 'People' (labelled as '79-Extension') was created to code any themes, which explained the delusions of control, reference and persecution in terms of human beings.

The data were analysed using the SPSS for Windows, Version 8.00. The analyses on demographic and diagnostic data were conducted using chi-square and *F* tests. The comparison between groups was computed by the chi-square analysis with cross-tabulation on presence and absence of different types and themes of delusions and hallucinations. The statistical analysis was not conducted in two conditions: (1) any empty cell, (2) expected frequency less than 5. Fisher's Exact Test Probabilities were calculated to ascertain the significance of difference between any two groups in the case of smaller frequencies. Differences were determined to be significant at the significance level of 5% or less.

RESULTS

Demographic and diagnostic data

Table 1 contains comparisons of the three groups on demographic and diagnostic data. There was a significant age difference between the groups with the BP group being the youngest and the PP group being the oldest. The BP group had lived in the UK for 17 years on average. Unfortunately, there were insufficient numbers in this group to allow a comparison of first- and second-generation patients. The two Pakistani groups were very similar in their gender distribution as well as in marital profile with nearly equal numbers in each sub-category.

Table 1
Demographic and diagnostic data of the groups

	White (50)	British-Pakistani (53)	Pakistani (98)	χ^2/F
Age (Mean $\pm$ SD)	36.48 $\pm$ 9.54	33.37 $\pm$ 11.99	38.44 $\pm$ 11.32	3.70 ^a
Age of entry in Britain	–	16.07 $\pm$ 11.65	–	
Gender N (%)				
Male	38 (76)	31 (58)	48 (49)	9.94 ^b
Female	12 (24)	22 (42)	50 (51)	
Marital status N (%)				
Single	40 (80)	22 (41)	44 (45)	24.31 ^c
Married	4 (8)	20 (38)	39 (40)	
Div/Sep.	4 (8)	10 (19)	14 (14)	
Not known ^d	2 (4)	1 (2)	1 (1)	
Diagnosis N (%)				
Schizophrenia	38 (76)	33 (62)	78 (80)	6.32
Paranoid delusions	10 (20)	14 (26)	14 (14)	
Schizoaffective	2 (4)	6 (11)	6 (6)	

^a: $p < .05$

^b: $p < .01$

^c: $p < .001$

^d: Not included in the chi-square analysis

Both groups contained more women and married people than did the White group. However, the groups were not different in their clinical diagnosis.

Table 2 contains the frequencies of occurrence of the broad categories of delusions as well as their themes in the three groups together with an indication of any significant differences between them. Delusions with relatively low frequencies (e.g. depersonalisation, misinterpretation) were not split into separate themes. Delusions of *control* were much more common in the White group than in either of the Pakistani groups and this applied to two sub-categories of delusions of control – thought broadcast/thought insertion and being controlled. In fact thought broadcast and thought insertion were some of the most common specific beliefs for the White group (36%) but were in low frequency in the Pakistani group (11%). The BP group was mid-way between the BW and PP groups both in frequency of thought insertion and being controlled.

Delusions of *reference* were present to a much lesser extent in the PP group but here the BW and BP group appeared to be virtually identical. An examination of specific beliefs in this category showed that the most common delusion in the BW was references on TV, radio and in remarks made by famous people in the media (28%). Nearly identical numbers from both British groups believed that they were being talked about as well as spied upon.

Delusions of *persecution* were relatively common in all three groups with the PP group being particularly likely to believe that someone was trying to harm them or their families (57%); this by far was the most common single delusion in this group. The three groups did not differ in the themes of conspiracy or plots.

Table 2
Phenomenology of delusions in three groups

PSE category	Delusion/Content	White (50) <i>N</i> (%)	British-Pakistani (53) <i>N</i> (%)	Pakistani (98) <i>N</i> (%)	χ^2
71	Delusion of control	25 (50)	14 (26)	13 (13)	23.31^c
	Thought broadcast/thought insertion	18 (36)	11 (21)	11 (11)	12.78 ^b
	Being controlled/being tested	14 (28)	6 (11)	3 (3)	20.32 ^c
72	Delusion of reference	24 (48)	23 (43)	11 (11)	29.22^c
	References and messages from different sources (TV/radio, famous people, agencies)	14 (28)	11 (21)	5 (5)	10.96 ^b
	Being talked about, being laughed at	11 (22)	12 (23)	5 (5)	12.44 ^b
	Being observed/spied/followed/recorded	8 (16)	8 (15)	2 (2)	11.24 ^b
73	Misinterpretation	4 (8)	3 (6)	8 (8)	0.34
74	Delusion of persecution	24 (48)	32 (60)	61 (62)	2.90
	Someone is trying to harm, hurt, attack, kill	18 (36)	14 (26)	56 (57)	14.83 ^c
	Conspiracy/plots	6 (12)	9 (17)	16 (16)	0.61
76	Delusion of grandiose ability	13 (26)	10 (19)	27 (28)	1.43
	Special psychic and physical powers	12 (24)	7 (14)	25 (26)	3.22
	Link with/invitation from famous people	1 (2)	4 (8)	5 (6)	—
77	Delusion of grandiose identity	7 (14)	12 (23)	41 (42)	14.04^c
	God/Jesus/Prophet Mohammad	3 (6)	4 (8)	10 (10)	0.83
	A star/hero/famous person	4 (8)	5 (9)	31 (32)	16.55 ^c
78	Religious delusions	7 (14)	11 (21)	11 (11)	2.54
	Special relation, communication with God	6 (12)	5 (9)	9 (9)	0.31
	Holy books	1 (2)	2 (4)	1 (1)	—
86	Sexual delusions	9 (18)	7 (13)	16 (16)	0.46
	Erotomania	4 (8)	5 (9)	14 (14)	1.58
	Someone is trying to control or operate sex organs	5 (10)	3 (6)	4 (4)	—
90	Depersonalisation	6 (12)	6 (11)	2 (2)	7.18^a
91	Hypochondrial delusions	4 (8)	9 (17)	5 (5)	6.03^a
	Brain and body parts breaking/altering	4 (8)	3 (6)	2 (2)	—
	Infections everywhere	0	6 (12)	1 (1)	—
79	Delusional explanations: paranormal				
	Spiritual forces	7 (14)	9 (17)	16 (16)	0.19
	Black magic	1 (2)	3 (6)	20 (20)	13.37 ^c
	Telepathy	10 (20)	5 (9)	2 (2)	13.88 ^c

Table 2 continued on next page

Table 2 (continued)

PSE category	Delusion/Content	White (50) N (%)	British-Pakistani (53) N (%)	Pakistani (98) N (%)	χ^2
79—					
Extension	Delusional explanations: people				
	Family/partner	8 (16)	12 (23)	32 (33)	5.57
	Friends/neighbours/colleagues	4 (8)	3 (6)	10 (10)	0.94
	Agencies	7 (14)	8 (16)	12 (12)	0.26
	Unknown	22 (44)	17 (32)	19 (19)	10.13 ^c
80	Delusional explanations: physical or machines	19 (38)	14 (26)	3 (3)	31.03 ^c

^a: $p < .05$

^b: $p < .01$

^c: $p < .001$

The three groups also did not differ from each other in either grandiose ability or its themes. However, Pakistani patients were significantly more likely than either the BW or BP group to have a *grandiose identity* delusion, which usually took the form of being a film star, a hero or a celebrity. The Pakistani group also contained 10 people who believed that they were God or Prophet Mohammad, which was less common in the other groups. Overall though, the frequency of religious delusions was low and did not significantly differentiate the three groups.

All three groups were not different from each other in the frequency of either the kind or the themes of *sexual delusions*; the differences between the three groups in themes of erotomania or control of sexual organs were not significant.

Finally, it was the BP group that stood out as having the most *hypochondriac delusions*. They were particularly likely to believe that infections (such as AIDS) were everywhere and causing them danger. White patients with hypochondriac delusions were more likely to believe their body was rotting or altering. The statistical analysis, however, was not conducted with the specific beliefs due to insufficient number of cases.

The specific delusional content of *paranormal explanations* revealed that a belief in telepathy was most common in the BW group (20%) whereas in the Pakistani patients a belief in the powers of black magic was more common (20%). The BP group was conspicuously more like the White group than the Pakistani group in this respect. This was also the case when beliefs about being influenced by radio/TV/X-rays/radar/computers/dish antenna and other machines were examined. Thirty-eight percent of White patients were recorded as having delusions of this type (the most common single delusion for this group) compared to 26% of BP and only 3% in the PP group. As far as the *delusional explanations about people* are concerned, BW and BP were conspicuous in believing that unknown people were controlling, persecuting and referring to them. In contrast, patients from the PP group had a tendency to delude that people influencing them belonged to their families.

Chi-square analysis was also computed for investigating the significance of difference between the pairs of groups on delusions and hallucinations. These analyses showed that the most remarkable differences existed between the pair of BW and PP both on kinds and themes of delusions. These groups appeared to be different on delusions of control ($\chi^2 = 23.41$; $p \leq .001$), reference ($\chi^2 = 24.80$; $p \leq .001$), depersonalisation (Fisher's Exact Test Probability $\leq .05$) and grandiose identity ($\chi^2 = 11.71$; $p \leq .001$); on specific delusional themes, they were different from each other on: thought broadcast/insertion, being controlled, references from different sources, being talked about, being spied upon, being harmed, identity of a star, black magic, telepathy, unknown people and physical explanations.

Analyses between other pairs showed greater differences in Pakistani groups (BP vs. PP) as compared to the British groups (BW vs. BP). White and PB patients only differed in frequency of delusion of control ($\chi^2 = 6.08$; $p \leq .05$), whereas PP and BP appeared to be different in delusions of control ($\chi^2 = 4.05$; $p \leq .05$), reference ($\chi^2 = 20.41$; $p \leq .001$), depersonalisation (Fisher's Exact Test Probability $\leq .05$), grandiose identity ($\chi^2 = 5.56$; $p \leq .05$) and hypochondriac delusions ($\chi^2 = 5.77$; $p \leq .05$). Similar findings were obtained when these pairs of groups were examined on specific themes of delusions. The BW and BP groups only differed in thoughts of being controlled, whereas BP and PP were different on themes namely: references from different sources, being talked about, being spied upon, being harmed, identity of a star, black magic, telepathy, unknown people and physical explanations.

Analysis on kinds and themes of hallucinations

As can be seen from Table 3 there were substantial differences in the modality of hallucinations experienced by the three groups of patients.

The great majority of the BW and the BP sample had *auditory* hallucinations and while these were not uncommon in the Pakistani group they were significantly less frequent than both BW ($\chi^2 = 18.62$; $p \leq .001$) and BP ($\chi^2 = 5.49$; $p \leq .05$). In the White group the most frequent hallucinations were hearing voices commenting on their behaviour and personality, calling bad names, telling them to kill themselves or other people and commanding them to carry out day-to-day activities. This pattern held for the BP group too although they were less frequent.

In all three groups, the most common voice heard was speaking directly to the subject rather than speaking about the patient in the third person. However, only here the two Pakistani groups were similar to each other and differed from the BW group, which surpassed both Pakistani groups in listening voices with direct communication to the patient. The predominant number of patients from the BW group believed that the voices were of family members or friends. Both British groups were hearing more voices of unknown people.

The specific content of visual hallucinations showed a reverse pattern with more PP seeing mental or real images of people. The table shows that *visual hallucinations* were more commonly experienced by the PP group than the two British groups. Pair-wise comparisons showed that the PP group had significantly more visual hallucinations than both the BW ($\chi^2 = 5.49$; $p \leq .05$) and BP ($\chi^2 = 5.49$; $p \leq .05$). The Pakistani patients were also conspicuous in visualising spirits or ghosts.

Table 3
Phenomenology of hallucinations in three groups

PSE category	Content of hallucinations	White (50) N (%)	British-Indian (53) N (%)	Pakistani (98) N (%)	χ^2
60	Nonverbal	6 (12)	4 (8)	12 (12)	0.86
61	Non-specific verbal hallucinations (61)	8 (16)	6 (11)	5 (5)	4.89
	Calling by name	4 (8)	1 (2)	0	—
	Voices speaking with each other	4 (8)	5 (9)	5 (5)	—
62	Verbal hallucinations	44 (88)	38 (72)	51 (52)	14.45^c
	Commenting on behaviour, personality and actions	9 (18)	8 (15)	3 (3)	10.37 ^b
	Commands on day-to-day things	12 (24)	11 (21)	11 (11)	4.60
	Threatening/insulting/criticising	9 (18)	7 (13)	16 (16)	0.46
	Calling bad names	16 (32)	8 (15)	8 (8)	14.09 ^c
	Kill self/people	12 (24)	9 (17)	6 (6)	9.88 ^b
	Pleasant, nice, loving voices	5 (10)	3 (6)	8 (8)	0.67
66	Visual Hallucinations	13 (26)	13 (24)	41 (42)	6.25^a
	Snakes/animals/spiders	2 (4)	2 (4)	1 (1)	—
	Mental or real images of people	4 (8)	6 (11)	23 (24)	19.22 ^c
	Spirits/Ghosts	5 (10)	1 (2)	19 (20)	10.04 ^b
	Objects	4 (8)	5 (9)	4 (4)	—
	Voices type				
	Voices speak about the subject	8 (16)	11 (21)	17 (17)	0.44
	Voices talk to the subject	24 (48)	15 (28)	21 (21)	11.25 ^b
	Voices ID				
	God	5 (10)	5 (9)	6 (6)	0.89
	Family/friends	13 (26)	4 (8)	11 (11)	8.47 ^a
	Evil/dead	2 (4)	2 (40)	5 (5)	—
	Unknown	28 (56)	27 (51)	23 (24)	19.22 ^c

^a: $p < .05$

^b: $p < .01$

^c: $p < .001$

The results regarding hallucinations were consistent with those of delusions in that the most exaggerated differences emerged between the PP and BW, and also that the two British groups appeared to be the most similar pair. Analysis regarding specific themes of hallucinations with pairs of groups showed that the BW group differed significantly from the PP on six themes namely: voices commenting, calling bad names and telling to kill themselves or people, voices talking to the subject, voices of unknown people, mental or real images of people. In contrast, the pair of BW and BP differed along only two themes of hallucinations: voices calling bad names and talking to the subject. The pair of Pakistani groups appeared to be different on four specific themes: voices commenting, voices telling to kill, voices of unknown and visions of ghosts/spirits.

DISCUSSION

This study provides the first-ever comparative data on delusions and hallucinations in these populations. Also it is the first to document the phenomenology of psychotic symptoms in patients of Pakistani origin living in different environments. The three groups included in this study allowed a test to be made of two competing hypotheses about the factors, which influence the phenomenology of psychotic delusions and hallucinations. The White patients and the Pakistani patients differed both in terms of their socio-religious socialisation and culture and their immediate environment. The BP group was more similar to the PP group on background cultural factors, but more similar to the White group in terms of environment (western, urban, inner-city). To the extent that the hallucinations and delusions of the BP group resembles those of the patients in Lahore, then this indicates a dominant influence of culture. On the other hand if their phenomenology more resembles that of the White group then immediate environment is more important.

Generally, British Pakistanis living in the UK reflect a relative lack of assimilation to western culture and values compared to other migrants to Britain. This is evidenced, for example, by the continued strong identification with Islam among Pakistanis in Britain as well as retention of traditional dress and food preferences. However, this group of BP patients after living 17 years on average in Britain showed close proximity to their western counterparts in many of their beliefs and perceptions. In general terms the greatest number of differences were between the Pakistani and White groups with the BP group being midway between the two. When the number of statistically significant differences is examined it is clear that the BP group is more similar to the White group than to the PP group. The two British groups differed significantly on only one of 25 specific themes (together with physical explanations) in the different delusional categories included in this study. On the other hand, differences between the Pakistani and the two British groups were remarkable; PP and BW were different on 11 dimensions and PB and PP differed on nine of 25 delusional themes (although the dimensions on which the groups varied were not the same). On specific themes in categories of hallucinations, the two British groups differed only on two dimensions of 18 themes, whereas the Pakistani groups differed significantly along four themes. The BW patients varied from the Lahore sample on six dimensions.

The BW and BP groups' phenomenology only differed with respect to delusions of control being more frequent in the White sample. On the other hand, the Lahore sample showed much more frequent beliefs in their grandiose identity, ideas of black magic, visual hallucinations and visions of spirits and ghosts than did their cousins in Birmingham or did the White group. They revealed significantly fewer delusions of reference, thought broadcast, of machines controlling their actions, telepathy and cases of hearing voices than was evident for the British groups.

Delusion of persecution was the one reported by the majority in all groups, a finding consistently reported from all cultures (Lucas *et al.*, 1962; Bhaskaran, 1963; Rao, 1966; Kala & Wig, 1982; Kim *et al.*, 1993; Tateyama *et al.*, 1993; Azhar *et al.*, 1995). Pakistani patients had the greatest frequency of beliefs of being attacked, poisoned and harmed. Paranoid beliefs develop if the individual is living in a climate of suspicion and also suffers from a deficit of organisation in thinking. Mirowsky (1985) indicates that wherever resources and opportunities are scarce, wherever exploitation and victimisation are common and wherever the

protection provided by institutions and agencies is weak, mistrust is a reasonable orientation towards others. Pakistani people have been going through political, economic and emotional turmoil for a long time. There is a huge gap between poor and rich, the economy is relatively weak, unemployment is escalating very rapidly and social justice is either unavailable or too expensive for a vast majority of people. In such circumstances, ideas of mistrust and beliefs of being harmed are not unexpected.

Unfortunately, we do not have any previous Pakistani study for comparison. However, the preponderance of persecutory themes in Pakistani patients is consistent with previous reports from India (Bhaskaran, 1963; Rao, 1966; Kala & Wig, 1982), very similar in culture, traditions and values to Pakistan. Rao (1966) examined 950 cases of schizophrenia in Bihar, India and found that the most common delusion was of persecution followed by the delusion of grandeur. Rao (1966) seeks the explanation of preponderance of persecutory ideas in the childhood experiences of Indian families. He indicates that in the Indian culture childhood is characterised by repression of hostility. During the socialisation process, a high premium is placed on obedience to elders and aggression receives hardly any encouragement. Rao (1966) hypothesised that direct hostility or aggression is repressed to appear in some cases in the form of delusions of persecution. Sixteen years later, Kala and Wig (1982) carried out a study of the content of delusions of 200 consecutive out-patients in Chandigarh with a diagnosis of schizophrenia or paranoia. The authors compared their findings with results reported from other countries. Firstly, they noted that the higher incidence of delusion of persecution in their sample was a finding congruent with reports from most other cultures. They explained the preponderance of persecutory ideas in all cultures by suggesting the possibility that patients with persecutory delusions might be considered more dangerous and hence more likely to be brought for treatment than patients with, for example, religious delusions who may be better tolerated. Secondly, they noted that the Indian patients outnumbered in persecutory themes of being harmed and poisoned than the western subjects. This Kala and Wig attributed to the fact that many cultures structure their social environment in terms of fear and aggression.

The British groups had a cluster of beliefs concerning the malign influences that TV, radio, electricity, computers, radar, dish antenna and machinery are having on their minds and bodies. Even some of the beliefs about thought broadcast and thought insertion involve the TV and radio. It is true that in western societies people are surrounded by physical devices that do have significant influences on their lives and about which most people have little understanding of how they work and what the true extent of their potential is. Not only are they surrounded by televisions, radios and mobile phones picking up messages from thin air, they now find there are powerful computers in their homes, workplaces and even their cars. There are also CCTV cameras observing them every few metres along their city streets and in every store, bank and hospital they enter. It is perhaps not difficult to understand why this technology has found its way into delusions.

The three groups also differed along another dimension of delusional explanations: the delusions of Pakistani patients included themes of magic, whereas the delusions of White patients had greater themes of telepathic communication. The White patients seem to believe in extra-sensory perception and the power of their own mind, whereas the Pakistani patients seem to perceive power in external sources, magic in this case. The patients from Lahore not only surpassed the British patients in reporting more magical delusional themes but also in

visions of spirits and ghosts, suggesting the greater possibility of the verbalisation of such responses in the context of cultural and religious norms (Al-Issa, 1995). The universe of Islam includes various classes of beings beside humans, such as *Jinn* (spirits), *Shaitan* (satanic beings) and *Farishta* (angels), and the existence of *them* has been acknowledged very clearly in Al-Quran, the Holy book of Muslims (Bose, 1997), which encourages people to visualize and believe in culturally and religiously sanctioned images and ideas.

The excess of magical themes may also be, in some cases, a way to put the responsibility for misfortune on some culturally accepted external source. This also is consistent with the greater number of persecutory ideas in the PP group. It is notable that among patients, who reported magical themes, many were suspicious that people were using black or cult magic to harm them or to make them miserable. In some cases, female patients believed that their in-laws were exercising black magic to harm them. Some male patients, on the other hand, were considering their own family members responsible for such practice. Westermeyer (1988) indicates that on several occasions during his visits in rural areas of Asia, the author observed otherwise intact individuals undergo time-limited experiences that often occur in the context of extraordinary family or communal stress. The BP patients were surprisingly similar to BW in their low frequency of magical themes. This supports the importance of immediate environment in shaping one's beliefs with an indication that in the societies undergoing rapid social change through industrialisation indigenous beliefs are subject to modification amongst those educated in the western way.

The Pakistani patients from Lahore were preoccupied with beliefs that they are in some way extraordinary and special. The delusions of grandiosity may, in part, be attributed to the large economic and social gap between the higher and lower strata found in Pakistani society and the difficulty of achieving upward social mobility for people from economically disadvantaged families. Perhaps it is not surprising that some people's aspirations of fame and success can be achieved only in delusions. Moreover, the ideas of grandiosity in an under-developed society with social and economic uncertainties may have served the purpose of wish-fulfilment on the part of deprived ones. Decades ago, Rao (1966) also found the delusion of grandiosity predominantly common in Indian schizophrenic patients.

It is particularly interesting to note the relative frequencies of auditory and visual hallucinations in the three groups. Previous findings of greater visual hallucinations in non-western cultures (Zarroug, 1975; Ndeti & Singh, 1983; Ndeti & Vadher, 1984b; Azhar *et al.*, 1993), than in western samples (Ndeti & Singh, 1983; Mueser *et al.*, 1990) were confirmed with the one exception that the Pakistani patients residing in the UK more closely resembled the White group (more auditory and less visual hallucinations) than the Pakistani group, suggesting again the significance of environmental influences.

Mueser *et al.* (1990) presents two explanations for the reported difference in prevalence of visual hallucinations between the studies conducted with western and non-western subjects: (1) this differential rate is evidence for the influence of culture on the expression of symptoms in schizophrenia; (2) patients accepted for in-treatment in non-western cultures may be proportionately more ill than European and American patients, resulting in a higher rate of visual hallucinations. Psychiatric treatment in some cultures may be sought less often and only when the illness is more severe. This may have contributed to comparatively higher frequency of visual hallucinations in the Pakistani group. There is evidence that the lack of economic resources common in many non-western cultures can serve as a barrier to psychiatric

hospitalisation, with only the most ill patients gaining admissions to hospitals (Eisenthal, 1989).

Al-Issa (1995) presents another explanation for the higher frequency of specific hallucinations in non-western societies. He indicates that in these societies the high frequency of reported hallucinations might merely mean that culturally sanctioned hallucinations come more often into the public domain through self-description. It is possible, accordingly, that a greater acceptance of 'seeing spirits' in traditional Pakistani culture may lead either to a lower threshold for the experience of visual hallucinations, or to an increased willingness to report them, resulting both in a high frequency of such delusions. Ilechukwu (1991) cited many studies indicating that hallucinations are more frequent in patients suffering from schizophrenia-like psychoses in Africa, providing some support to the hypothesis of a lower threshold of culturally accepted experiences.

Before we can conclude that immediate influences are more important in determining the content of delusions and hallucinations than is cultural background we must remember that this study is based on case note data. Case notes record symptomatology as elicited, perceived and interpreted by the psychiatrist or other mental health professionals. Could it be that psychiatrists in the UK are more likely to uncover certain symptoms (for example auditory hallucinations) and overlook others (e.g. visual hallucinations) compared to their counterparts in Pakistan? This is, of course, quite credible as an explanation of the relative similarity of the two UK samples compared to the Lahore sample. Two further factors should also be borne in mind here though. Firstly, most British and Pakistani psychiatrists receive similar training, use the same textbooks and have to pass the same examinations so their biases in perception will be somewhat similar. Secondly, at All Saints Hospital in Birmingham, many of the psychiatrists are from Pakistan so there is some cultural homogeneity between Birmingham and Lahore on this side of the equation.

CONCLUSIONS

The findings of the present work indicate that the content of psychiatric symptoms is likely to reflect both the place and time in which the person is living and the theme of the same symptoms reflect the patient's cultural milieu. Although cultural factors are important in phenomenology of delusions and hallucinations, immediate environment and life experiences seem to be of greater importance in these connections.

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