A Literature Review: Refusal of Psychotropic Medication in Acute Inpatient Psychiatric Care

Report from the Conflict and Containment Reduction Research Programme

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Background

Medications have become the mainstay of psychiatric treatment. A core function of acute psychiatry is the treatment of patients with the use of medication (Bowers et al. 2005; Bowers et al. 2009). The refusal of, and prevalence of long-term non-adherence to, medication is a major problem in mental health care with enormous costs and burden. In a review of studies of medication compliance conducted between 1975 and 1996, for both psychiatric and mental illnesses, the mean levels of compliance were 58% for antipsychotics, 65% for antidepressants, and 76% for medications to manage nonpsychiatric medical illnesses (Cramer and Rosenheck 1998). It is estimated that about 40% to 60% of people suffering from schizophrenia, and 80% of all psychotic patients, are non-adherent (Corrigan, Liberman and Engel 1990; Lacro et al 2002), and the estimated cost of national rehospitalisation the USA was US$ 1479 million in 2005 (Sun et al 2007).

Medication refusal is at the centre of conflict and containment in psychiatry. Medication related conflict between patients and staff accounts for 18% of total containment use (Bowers 2009). The mean daily rate of incidents of refusal of medication is once per day in an average acute psychiatric ward and is often associated with passive resistant patient behaviours and higher levels of containment (Baker et al. 2009). The cost of medication refusal in inpatient wards has neither been calculated nor estimated. However, the impact is evident through poor outcomes, longer hospitalisations, more rehospitalisation, higher rates of seclusion, control and restraint, threats of assault and violence, and actual assaults. Though not yet determined, additional costs occur through wasted medication, extra staff, and staff absences. Many conflicts between patients and staff are partially generated by refusal of medication, and containment of these conflict situations is often done with medication. Nursing staff are at the centre of patient behaviours either as bearing the brunt of, mitigating the consequences of, or resolving the conflicts that emanate from, medication refusal.

The refusal of medication is major issue in treating patients with psychiatric illnesses. The scope of the right of the patient to refuse medication, as well as standards and procedures to be followed to determine when refusal can be overturned continues to generate debate among psychiatrists and civil rights activists. This debate also varies across the continents.

The review

One review (Appelbaum and Hoge 1986) of the research evidence on the right to refuse medication carried out decried the lack of systematic studies. More than two decades later, this report reviews the current state of empirical knowledge of the refusal of psychotropic medication among in inpatient psychiatric patients. Following an extensive literature search a total of twenty-two articles that met the inclusion criteria were found. Out of this, six studies were conducted in forensic psychiatric settings.
As this review indicates, refusal of psychotropic medication / treatment has so far generated few empirical studies. This review is comprised of three studies from the United Kingdom and eighteen from the United States of America.

**Aims**

The aims of this review were to examine the evidence for studies of medication refusal and evidence to support the model of conflict and containment.

**Method**

Bibliographic databases including Medline, EMBASE psychiatry, DARE, PsychINFO, CINAHL, ASSIA, HMIC, Web of Science and the Cochrane database were searched. PsycINFO and CINHAL databases from 1960 onwards was searched using terms ‘Involuntary Treatment’, ‘Treatment Refusal’, ‘Pharmacotherapy or Chemotherapy or medication’, ‘inpatient or hospital’, ‘psychiatry or mental’ yielding a total of 49 references and 38 references respectively. In addition, Medline, EMBASE psychiatry, DARE and Cochrane review databases from 1960 onwards were searched using terms ‘psychiatry or mental’, ‘inpatient or hospital’, ‘medication or pharmacotherapy or chemotherapy’, and ‘refusal or compliance or adherence or concordance’ yielding a total of 577 references. These references were manually sieved for relevance yielding twenty-two articles. Additionally, grey search engines such a Google scholar, web of science, science direct, and various journal websites were searched.

The relevance of the literature from these searches was initially ascertained from titles and where these appeared relevant, abstracts or equivalent summary information were scrutinised. The selected articles published in English that met the inclusion criteria were then read. Study details such as sample size, sample type, study location, method of classifying ethnicity and ethnic groups were included. Explanations offered for medication refusal, refusal rates, impact of refusal on refusers and the ward milieu, etc. have been sieved.

**1. Definitions, Aims, and Methodologies**

**Definition of medication refusal**

Various studies have defined medication refusal diversely. In their study, Appelbaum and Gutheil (1980, p341) have indicated that medication refusal would require an affirmative act beyond mere non-appearance at the medication room door. Patient that refused medication would have to be direct and confrontative by either explicitly reject medication verbally or fail to respond to a direct approach by a member of the ward staff. Patients who covertly “palmed” or “tongued” or “cheeked” medication were not considered refusers unless subsequent to discovery, they overtly refused the medication (Appelbaum and Gutheil 1980, p341). Like Appelbaum and Gutheil (1980), three other studies (Hoge et al. 1990; Littrell et al. 1994; Kasper et al. 1997) noted that to be designated as refusers, patients had to indicate
overtly by act or statement to the medication nurses their rejection of prescribed antipsychotic medication. Unlike Appelbaum and Gutheil (1980), they indicate that refusers of medication must maintain that rejection for at least 24 hours. On the other hand, Zito et al (1986) in their study defined refusal of medication “as serious, persistent refusal that continued for at least a week and did not respond to efforts by the treatment team to negotiate a satisfactory treatment plan” (p330). In the same vein, Rodenhauser et al (1987) also classified refusing patients as those “patients who persisted in their non-acceptance of prescribed medication for at least one week at any time during their hospitalisation (pg 632)”.

There are two types of typologies of refusers of medication, that is behaviour-based and symptom-based classification. In their pioneering study of inpatient medication refusers, and using a symptom-based classification, Appelbaum and Gutheil (1980) found that refusers fell into three relatively distinct groups: situational refusers, a diverse group of patients who refused medication for a short period of time for a variety of reasons; stereotypic refusers, chronically ill patients with paranoid traits who habitually and predictably respond to a variety of stresses with brief medication refusal; and symptomatic refusers, young relatively acutely ill patients whose refusal, often based on delusions, was sustained over a long period and successfully stymied treatment efforts. However, Panzano and Rubin (1995) using a behaviour-based taxonomy, have also identified three consent status groups. They have also pointed out that the two approaches used to classify the patients into various refuser subgroups, either cross-sectional or longitudinal taxonomy, can influence the analysis of the relationship between refusal of antipsychotic medication and the involvement in hospital-based outcomes and conflicts. In the cross-sectional approach, patients are either classified as either “refusers” or “non-refusers” based on their informed consent status at the time of the event. On the other hand, the longitudinal approach to patient classification has taxonomised refusers into three status groups based on whether informed consent status changes overtime. If the patient’s informed consent behaviour did not change over the course of involvement in one or more conflict events, the patient was classified as either a “consistent refuser” or a “consistent non-refuser” – depending on whether they were accepting or rejecting medication at the time of the involvement in one or more events. In contrast if the patients’ consent status did change overtime, the patient was classified as a “status changer”.

Littrell et al (1994), who defined a refuser as a patient who refused at least one dose of psychotropic medication, combined behaviour and time-limit to, classify refusers into two groups. Persistent refusers are patients who refused medication persistently for 24 hours or more, and all others were classified as non-persistent refusers, even if refusal lasted less than 24 hours (Littrell et al 1994).

Two studies ((Bloom et al 1984; Bloom et al 1988) have identified three patterns of refusal. There are a group of patients that refuse antipsychotic medication from time of hospital admission, another group of those who initially take medication and later refuse, and those who are intermittently non-compliant. These patterns of refusals have however not been analysed in terms of hospital outcomes.
These divergent definitions of refusal have influenced refusal rates. In the literature reviewed, various terminologies have been used to refer to patients that refuse medication such as non-complier, very non-complier, consistent refuser, non-consistent refusers, persistent refusers, and non-persistent refuser.

**Aims and Methods of reviewed studies**

Studies examining the rates of medication refusal and characteristics of, and the impact of, medication refusal on medication refusers have had varying results due mainly to diverse methodologies and aims. Four out of the twenty-two studies have used qualitative methodology (Marder et al 1984; Schwartz et al 1988; Hoge et al 1990; Kasper et al 1997). Amongst these, three studies (Hoge et al 1990; Levin et al 1991; Kasper et al 1997) compared samples of medication refusers with acceptors. Nine additional studies (Appelbaum and Gutheil 1980; Hayman 1981; Marder et al 1984; Rodenhauser et al 1987; Hoge et al 1990; Littrell et al 1994; Urrutia 1994; Kasper et al 1997; Baker et al 2009) have used prospective methodology to examine the impact of medication refusal among severely mentally ill on treatment outcomes. The only relevant intervention study is a randomised controlled trial of compliance therapy and non-specific counselling in acute psychiatric wards (Kemp et al 1996).

Ten studies have used retrospective data from medication charts and inpatient hospital records to study medication refusal (Bloom et al 1984; Zito et al 1985; Zito et al 1986; Bloom et al 1988; Schwartz et al 1988; William et al 1988; Smith 1989; Levin et al 1991; Sellwood and Tarrier 1994; Panzano and Rubin 1995; Ballinger and Irvine 1999). One study was based on personal observations and experiences (Rodenhauser 1984).

The studies also have been carried in diverse mental health settings. While two studies were conducted in more than one unit, Hoge et al (1990) study was a cross-sectional carried out in four acute units in four different state operated mental health facilities, while Kasper et al (1997) was carried out in three admission units in one state hospital. Schwartz et al (1988) was carried out in two inpatient psychiatric units at a non-profit university-affiliated teaching hospital in New York City. Additional eight studies (Appelbaum and Gutheil 1980; Bloom et al 1984; Marder et al 1984; Zito et al 1985; Zito et al 1986; Bloom et al 1988; Littrell et al 1994; Sellwood and Tarrier 1994; Ballinger and Irvine 1999) have been carried out in single inpatient units of State hospitals. Two studies (Urrutia 1994; Panzano and Rubin 1995) were conducted in five psychiatric wards, and thirteen adult psychiatric care facilities respectively both in different single hospitals. One study (Levin et al 1991) was carried out in a private health unit attached to a large teaching hospital. The Baker et al (2009) paper is based on the analysis of data collected across 136 acute wards in 67 NHS hospitals in England. Five studies (Hayman 1981; Rodenhauser 1984; Rodenhauser et al 1987; Williams et al 1988; Smith 1989) of the 21 studies were carried out in forensic inpatient units. Five studies (Bloom et al 1984; Bloom et al 1988; Zito et al 1985; Zito et al 1986; Levin et al 1991) of the 21 studies have focussed on involuntarily admitted patients.

**Rates of refusal**
Ten studies (Hayman 1981; Zito et al 1986; Rodenhauser 1984; Rodenhauser et al 1987; Hoge et al 1990; Ballinger and Irvine 1991; Levin et al 1991; Littrell et al 1994; Urrutia 1994; Kasper et al 1997) have calculated and expressed rates of medication refusal as patient-based percentage of refusers in comparison to acceptors of medication during the study periods, which have varied from 3 months to 27 months. This is equivalent to patient-based rate per 100 admissions (Bowers 2000). Based on the above ten studies, the rates of refusal of medication range from 2.03 to 61.9 with a mean of 20.08 per month per 100 admissions.

Table: Patient-based rate of medication refusal

<table>
<thead>
<tr>
<th>Study</th>
<th>Composition of sample</th>
<th>Total sample (n)</th>
<th>Refusers (n)</th>
<th>Duration of data collection (months)</th>
<th>Percentage of refusers</th>
<th>Rate per month per 100 admissions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kasper et al 1997</td>
<td>All admissions</td>
<td>348</td>
<td>41</td>
<td>6</td>
<td>12.9</td>
<td>11.7</td>
</tr>
<tr>
<td>Littrell et al 1994</td>
<td>All admissions</td>
<td>487</td>
<td>48</td>
<td>3</td>
<td>9.9</td>
<td>3.28</td>
</tr>
<tr>
<td>Urrutia 1994</td>
<td>All admissions</td>
<td>1969</td>
<td>40</td>
<td>12</td>
<td>2.03</td>
<td>2.03</td>
</tr>
<tr>
<td>Hoge et al 1990</td>
<td>All admissions</td>
<td>1434</td>
<td>103</td>
<td>6</td>
<td>7.2</td>
<td>7.2</td>
</tr>
<tr>
<td>Ballinger and Irvine (1991)</td>
<td>All admissions</td>
<td>732</td>
<td>135</td>
<td>6</td>
<td>18</td>
<td>18.44</td>
</tr>
<tr>
<td>Levin et al 1991</td>
<td>Involuntary admissions</td>
<td>237</td>
<td>37</td>
<td>6</td>
<td>15.6</td>
<td>15.4</td>
</tr>
<tr>
<td>Zito et al 1986</td>
<td>Involuntary admissions</td>
<td>664</td>
<td>120</td>
<td>27</td>
<td>18</td>
<td>18.07</td>
</tr>
<tr>
<td>Rodenhauser et al 1987</td>
<td>All forensic admissions</td>
<td>421</td>
<td>147</td>
<td>9</td>
<td>34.9</td>
<td>34.8</td>
</tr>
<tr>
<td>Rodenhauser 1984</td>
<td>All forensic admissions</td>
<td>39</td>
<td>14</td>
<td>12</td>
<td>35.8</td>
<td>35.9</td>
</tr>
<tr>
<td>Hayman 1981</td>
<td>All forensic admissions</td>
<td>113</td>
<td>70</td>
<td>3</td>
<td>62</td>
<td>61.9</td>
</tr>
</tbody>
</table>

The overall mean rate of medication refusal is skewed by the higher rates ranging from 34.8 to 61.9 with a mean of 44.2 reported by studies conducted in forensic settings (Hayman 1981; Bloom et al 1984; Rodenhauser 1984; Rodenhauser et al 1987). The mean rate of medication refusal in studies (Zito et al 1986; Hoge et al 1990; Ballinger and Irvine 1991; Levin et al 1991; Littrell et al 1994; Urrutia 1994; Kasper et al 1997) non-forensic settings is 10.87 with a range from 2.03 to 18.44 is further skewed by the two studies (Zito et al 1986; Levin et al 1991) that focused on involuntary admissions only. Based on the general admissions (Hoge et al 1990; Ballinger and Irvine 1991; Littrell et al 1994; Urrutia 1994; Kasper et al 1997) in acute inpatient wards, the average rate of refusal is 8.53 per month per 100 admissions with a range of 2.01 to 11.7 per month per 100 admissions. Baker et al
(2009) on the other hand has reported a mean daily rate (event-based rate), calculated at ward level, and standardised to 20 beds of incidents of refusal of regular medication of 0.89. This is an event-based rate, rather than patient-based rate (Bowers 2000).

Studies (Zito et al 1986; Rodenhauser et al 1987) that have operationalised refusal as lasting for at least one week have reported lower rates of refusal. In addition, the studies (Bloom et al 1984; Zito et al 1986; Levin et al 1991) that identified medication refusers, and defined refusal, based on reaching judicial or legal / administrative review process are likely to underestimate the rate and impact of refusal than those studies that have required 24 hours (Appelbaum and Gutheil 1980; Hoge et al 1990; Littrell et al 1994; Urrutia 1994; Kasper et al 1997). But still a study (Levin et al 1991) which compared a sample of involuntarily admitted medication refusers (n=37) and acceptors (n=37) who had petitioned for a judicial review has calculated a higher refusal rate of 15.6.

A study of Hoge et al (1990) found a mean lower refusal rate of 7.2 (103 out of 1434 patients) varying from a low of 5.7 at one community health center to a high of 8.7 at the other. The Hoge et al. (1990) is even lower than some rates reported previously in studies that ascertained cases of refusal solely by identifying those that reached the clinical or legal review process (Hoge et al 1987; Bloom et al. 1984; Zito et al. 1986; Zito et al. 1984). The rate of refusal in Kasper et al (1997) study, 12.9% (n=348) is higher than 7.2% reported in Hoge et al (1990) study though they employed a similar method. But the facilities in which Kasper et al (1997) study was based had a great proportion of involuntary patients than did the facilities studied by Hoge et al (1990) (85% versus 56% in the comparison groups). In addition, a great number of patients in Kasper et al (1997) were much sicker. The differences in rates of refusal found in the two studies may also be due to the definition of refusal that Kasper et al (1997) applied which included patients treated as emergencies who could have been persuaded to accept medication within 24 hours and were excluded in Hoge et al (1990) study. Another significant difference between the two studies (Hoge et al 1990; Kasper et al 1997) is that the latter was done in a jurisdiction employing a rights-driven judicial review model as opposed to treatment-driven model of the former. Generally the range of rates of refusal in treatment-driven models of jurisdiction is smaller, ranging from 12.9 to 15.6 than in rights-driven models which range from 7.2 to 15.6.

The literature also indicates that the type of admission influenced rates of refusal. As patients admitted involuntarily are likely to be sicker, they are at greater risk of refusing medication. Studies (Zito et al 1986; Levin et al 1991) that focussed on involuntary admissions per se have reported higher rates of medication refusal. However, the data for all admissions is not provided, it is difficult to deduce whether involuntarily admitted patients are more likely to refuse medication in comparison to voluntary admissions. Marder et al (1984) asked involuntarily admitted patients to a Veteran Administration hospital who did not have the right to refuse medication at the time, whether they could refuse medication if presented with an opportunity to do so. The author reports a refusal rate of 48% of patients who said that they would refuse medication. Though the methodology employed is not robust, the rate of refusal is not that much greater than the 35 and 36 reported by Rodenhauser et al (1987) and Rodenhauser (1984) respectively in two separate studies in forensic settings.
The average rate of medication refusal in acute inpatient settings of generic acute admission units is 8.58 per month per 100 admissions. This however is skewed by the large variation in rates presented by the studies. As such the evidence for the accurate rate of medication refusal is inconclusive. Variations in the rate of refusal across studies relate to a number of factors, such as the definition of refusal, patient mix, the proportion of patients prescribed medication, prescribing skill and practices, jurisdiction, type of admission, differences in the characteristics of patient population, family involvement, and diverse methodologies employed by studies. That methodology of study influence rates of medication refusal is demonstrated by the unpublished report by Hargreaves et al cited by Appelbaum and Hoge (1986) where 50% of patient admitted to state hospital in California objected to medication, though only 5% successfully refused medication longer than 24 hours.

2. Patient factors associated with refusal of medication

(i) Demographic characteristics of patients that refuse medication

Though most studies (Hoge et al. 1990; Levin et al. 1991; Littrell et al. 1994; Urrutia 1994; Kasper et al. 1997) have described the demographic characteristics of patients in their samples, few studies (Bloom et al (1984); Williams et al 1988; Zito et al 1986; Hoge et al. 1990; Levin et al. 1991; Panzano and Rubin 1995; Sellwood and Tarrier 1994; Kasper et al. 1997) have tested these variables in their comparison of refusal groups with acceptor groups.

Gender: Four studies (Zito et al 1986; Hoge et al 1990; Levin et al 1991; Panzano and Rubin 1995; Kasper et al 1997) have found that refuser and acceptors of medication did not statistically differ in gender / sex. Though not statistically analysed, Zito et al (1985) found that refusers were predominantly male (63%), while Bloom et al (1984) indicates that women (n=43, 52%) refusers slightly outnumbered men (n=39, 48%). These studies point to the evidence that gender has no significant effect on refusal of medication.

On the other hand Sellwood and Tarrier (1994) indicate that male Afro-Caribbeans were more likely to be in the very non-compliant group than non-Afro-Caribbean men. In the Afro-Caribbean group men were more likely to be in the very non-compliant group than women, but there was no such difference in the non-Afro-Caribbean group (Sellwood and Tarrier 1994). Following a univariate analysis, the compositions of the very non-compliant and compliant group were significantly different in terms of gender as it made a significant contribution in predicting which group patients belonged to (Sellwood and Tarrier 1994). Sellwood and Tarrier (1994) study was based in urban hospital in Central Manchester which is likely to have a higher proportion of Afro-Caribbean men in their records. Gender therefore, might interact with ethnicity to have an influence on refusal of medication.

Ethnicity: Some controlled comparison studies of refusers and acceptors indicated that acceptors and refusers did not significantly differ on ethnicity / race (Marder et al 1984; Zito et al 1986; Hoge et al 1990; Levin et al 1991; Kasper et al 1997). Panzano and Rubin (1995) also found that consistent refusers and consistent non- refusers did not differ in terms of race.
Three studies (Bloom et al. 1984; Zito et al. 1985; Sellwood and Tarrier 1994) have however indicated that ethnicity influenced medication refusal. Following a logistic regression analysis, ethnic origin made the largest contribution of predicting whether patients would comply with medication (Sellwood and Tarrier 1994). Following a univariate analysis of data in this study, the very non-compliant group and compliant group were significantly different in terms of ethnicity, with the patients in the very non-compliant group likely to be Afro-Caribbean. Two other studies (Bloom et al. 1984; Zito et al. 1985) have however indicated that majority of refusers were Caucasian.

The available evidence therefore points to the possible role of ethnicity in the refusal of antipsychotic medication, though the direction of influence is not clear.

**Marital status:** Four studies (Zito et al. 1986; Hoge et al. 1990; Levin et al. 1991; Kasper et al. 1997) have concluded that acceptors and refusers did not differ significantly on marital status. Two studies have found some difference. Bloom et al. (1984) found that only six (15%) of men who refused medication had never been married compared to 29 (67%) of women. Another study (Zito et al. 1985) has noted that refusers (n=30) were predominantly single (n=19, 63%). Available evidence indicates that marital status has limited effect on refusal of medication, though its role remains inconclusive.

**Age:** Six studies (Marder et al. 1984; Zito et al. 1985; Bloom et al. 1988; Levin et al. 1991; Sellwood and Tarrier 1994; Panzano and Rubin 1995) indicate that acceptors and refusers do not significantly differ on measure of age. Though following a univariate analysis, Sellwood and Tarrier (1994) found that Afro-Caribbeans in the very non-compliant group were younger than non-Afro-Caribbeans and women were older than the men, a further multivariate analysis indicate that age was not significant in predicting which group patients belonged to.

Though not statistically significant, one comparative study of refusers with acceptors of medication has however indicated that refusing patients were slightly older than the control group (mean±SD = 38.7±13.4 vs 35.6±11.04) (Hoge et al. 1990). These results can be contrasted with results from Kasper et al. (1997) where refusers are slightly younger than acceptors (mean±SD = 33.2±9.4 vs 35.9±9.7). An audit that compared refusers and nonrefusers on age, indicated that 26.2% of those over 65 years of age refused drugs as opposed to 13.8% under the age of 65, and 13% under the age of 30 (Ballinger and Irvine 1999). These differences are however not significant. Currently there is no evidence that age has a significant effect on refusal of medication.

**Preadmission accommodation and Living arrangements:** Two (Hoge et al. 1990; Kasper et al. 1997) studies indicate that acceptors and refusers did not significantly differ on preadmission living status. One study (Levin et al. 1991) however found that the refusers were likely to be homeless before hospitalisation, and the second most frequent living situation was with family. Another study (Bloom et al. 1984) found that out of patients (n=68) who refused medication, the most common living arrangement for involuntarily committed patients was with the family (n=27, 40%), followed by living independently (n=20, 29%), and lastly in sheltered accommodation (n=12, 18%). In addition, Schwartz et al. (1988) indicate
that retrospective non-compliers had poorer living arrangements when compared to retrospective compliers. Currently there is not enough evidence to gauge the influence on preadmission accommodation and living arrangements on refusal of medication due to lack of rigorous studies.

**Socio-economic status:** Two comparison studies (Hoge et al 1990; Kasper et al 1997) have recorded conflicting results on the socio-economic status of refusing patients. Hoge et al (1990) found that in their urban-based hospital there is a strong relationship between refusal and social class with refusers coming from the lower socio-economic class. On the other hand, Kasper et al (1997) whose hospital was rural-based found that refusers did not differ significantly on measures of socio-economic class. It appears that the influence of urban versus rural environment may have had a confounding effect on the results. As it is, there is inconclusive evidence that socio-economic status influences medication refusal.

**Employment status and education:** As lack of healthcare insurance is related to unemployment, it follows therefore that lack of medical insurance among refusers could be due to unemployment. In fact two studies (Hoge et al 1990; Kasper et al 1997) found that refusers were significantly less likely to have medical insurance thus had greater alienation from private medical facilities and social support systems. A study by Bloom et al (1987) found that 92% (n=35) of the refusers were unemployed at the time of hospital admission. In the same vein, Schwartz et al (1988) also found that retrospective non-compliers had poorer work histories than compliers though differences were not significant. In terms of gender differences, Bloom et al (1984) found that in their sample (n=82) of refusers, statistically more women refusers of medication occupied functional roles than men as only one (3%) man was employed, while 5 (12%) women were employed and 6 (14%) functioned as homemakers.

The influence of the level of education and employment status on refusal of medication has not been comprehensively explored. However, some evidence indicates that those who are unemployed are likely to refuse medication. Equally the impact of education on refusal of medication has not been conclusively explored neither. Only two studies (Bloom et al 1987; Zito et al 1985) have indicated that in their samples refusers were predominantly high school graduates.

**(ii) Type of, and legal status on, admission**

Studies carried out in forensic secure units, and those which drew their sample primarily from involuntary patients have been excluded from this section.

Three comparison studies (Zito et al 1986; Hoge et al 1990; Kasper et al 1997) have reported that groups that refused and accepted treatment did not differ significantly on measures of admission legal status. However, another three studies (Littrell et al 1994; Urrutia 1994; Kemp et al 1996) indicate that involuntary patients were significantly more likely to become refusers. In a randomised control trial, Kemp et al (1996) after performing stepwise linear regression with backward elimination found that detention under the Mental Health Act had significant effect on compliance as voluntary patients complied better. Littrell and colleagues (1994) did find that more persistent refusers were admitted involuntarily than were
nonrefusers or non-persistent refusers. In the Urrutia (1994) study, twenty-seven (67%) out of a sample of 40 patients refusing medication were admitted involuntarily. This figure represents a large number in comparison with all psychiatric admissions to the hospital, of which only 25% were admitted involuntarily.

Though involuntary admission could predict refusal of, and poor compliance with, psychototropic medication, the available evidence from more rigorous comparison studies indicated that legal status at admission might not significantly influence refusal of medication.

(iii) Diagnosis

Two comparison studies (Hoge et al 1990; Kasper et al 1997) have not found significant statistical differences in discharge Axis I diagnosis (schizophrenia, depression and mania) between the refuser and the control group. In a comparison of the two groups using a Mann-Whitney nonparametric procedure, Levin et al (1991) also found that there was no significant difference between refusers and consenters on Axis I (schizophrenia, bipolar, major depression, and other) diagnosis on admission or discharge. However, on further analysis, what is statistically significant is that on diagnosis of bipolar disorder, there were twice as many as refusers as were consenters.

Two studies (Zito et al 1985; Zito et al 1986) found that refusers of medication were likely to be diagnosed with bipolar disorder and schizoaffective disorder, while majority of consenting patients had a diagnosis of schizophrenia. These findings are however contradicted by other studies (Bloom et al 1984; Bloom et al 1987; Rodenhauser et al 1987; Smith 1989) who found the most common diagnosis among refuser of medication was schizophrenia. Bloom et al (1987) particularly found that refusers were most likely to be diagnosed with schizophrenia (n=65, 79% vs n=24, 63%) followed by affective disorder (n=16, 20%) vs bipolar disorder, manic type (n=13, 34%). This study is also supported by other findings (Marder et al 1984; Ballinger and Irvine 1999; Urrutia 1994) who found that most refusers were diagnosed with schizophrenia, followed by affective disorders in that order.

Rodenhauser et al (1987) found a three-way relationship or three-factor interaction between the axis I diagnosis, axis II diagnosis, and medication refusal. Specifically the relationship between the axis I diagnosis and medication refusal was dependent on the axis II diagnosis. The authors found that while there was no statistically significant relationship between medication refusal and the axis I diagnosis, patients without psychoses who refused medication had a high frequency of personality disorders compared with psychotic patients who accepted medication. Among the subpopulation of refusers, axis I and II diagnoses were significantly related.

Though rigorous comparison studies did not find statistical significant difference in diagnosis among acceptors and refusers of medication, some evidence indicate that patients with affective disorders are likely to accept medication when compared to those with psychoses. In fact, one study (Marder et al 1984) indicates that patients who said that they would accept medication were significantly depressed. However among the patients with affective
disorder, those who are diagnosed with bipolar disorder are likely to refuse medication (Levin et al. 1991).

(iv) **Symptoms**

Refusers of medication are reported to be characteristically sicker and significantly disturbed than acceptors of medication (Marder et al. 1984; Rodenhauser 1984; Bloom et al. 1984; Schwartz et al. 1988; Smith 1989; Hoge et al. 1990; Littrell et al. 1994; Kasper et al. 1997). Refusers have elevated ratings on several Brief Psychiatric Rating Scale (BPRS) subscales related to psychosis such as conceptual disorganisation and unusual thought content, hostility and agitation, uncooperativeness, suspiciousness, grandiosity, excitement, and disorientation subscales at time of admission (Hoge et al. 1990, Kasper et al. 1997). Smith (1989), in his statistical analysis found that non-compliance was significantly associated with exhibiting gross, bizarre, or otherwise unmanageable behaviour, paranoid thinking, and hallucinations or delusions. Urritia (1994) in a comparison between refusing patients who were medicated involuntarily with those who were not medicated revealed that delusion was the most cited reason for refusal. Marder et al. (1984) also indicate that the refusers had significantly higher BPRS ratings for conceptual disorganizations, grandiosity, hostility, uncooperativeness, unusual thought content, excitement, and elevated mood. In addition, refusers had less insight, less understanding of rationale for treatment, were significantly less likely to acknowledge their illness and did not believe in treatment’s efficacy. Moreover, refusers gave grandiosity, delusion, and psychotic denial as reasons for refusing medication (Rodenhauser 1984; Littrell et al. 1994; Urrutia 1994). In the Levin et al. (1994) comparative study, refusers were quite ill with average scores of 24 on admission GAF scores than acceptors on discharge. However as noted by Schwartz et al. (1988) in their study, at the time of discharge refusers remained quite ill and continued to display grandiosity, suspiciousness, paranoia, hostility, conceptual disorganisation, unusual thought content, and mannerisms and posturing. In a randomised control trial, Kemp et al. (1996) after performing stepwise linear regression with backward elimination found that patients with more extrapyramidal symptoms had compliance with medication.

Some studies (Marder et al. 1984; Hoge et al. 1990; Kasper et al. 1997) also found that patients who accepted medication scored higher on scores related to anxiety, depression, and guilt.

Though there is evidence that certain symptoms of psychosis, its severity, and higher mood elevation play a role in treatment rejection, refusal of medication might also contribute to the severity of symptoms. There is evidence that refusers of antipsychotic medication are sicker and are extremely disturbed. On the other hand the causal effects work in both directions as illness severity characterised by delusions, hostility and unmanageable behaviour, and paranoid thinking leads to refusal just as refusal of medication causes severity of the illness. The patients with severe symptoms will be less likely to acknowledge their illness and the need for treatment.
(v) **Dose of medication**

Two studies (Hoge et al 1990; Kasper et al 1997) have indicated that medication refusers were prescribed higher doses of antipsychotic medication in Chlorpromazine equivalents than acceptors. Related to the above, Zito et al (1985)’s comparison of the prescribed medication dose per day in Chlorpromazine equivalents also showed that refusers were prescribed one-third as much neuroleptic as consenters; 449mg/day and 225mg/day, respectively. Two studies (Hoge et al 1990; Kasper et al 1997) have found that there was no statistical difference on the prescription of antiparkinsonian medications between refusers and accepters of antipsychotic medication.

The difference in dose of antipsychotic medication has also been found at the point of discharge from the hospital (Zito et al 1986). Medication (expressed as Chlorpromazine-equivalents) ordered for refusers at discharge were nearly half as much as consenters. The results of a two-way analysis of variance of the effects of refusal status and diagnosis on average daily dose of antipsychotic medication prescribed at discharge indicated that both factors contributed to the variance in dosage and the interaction of two factors approached significance.

The refusers did not differ significantly from acceptors on the type of prescribed neuroleptic medications (Hoge et al 1990; Kasper et al 1997). In addition, there were no significant differences noted in the potency of antipsychotic medications prescribed for refusers compared with acceptors (Hoge et al 1990).

Conclusive evidence exists that patients who refuse medication are likely to be prescribed higher doses of medication both during the hospitalisation and at discharge. However, there should be caution as prescription cannot be equated with the taking of medication though the former has an influence on the latter. Studies are still lacking on the type of medications that are likely to be refused by refusers of medication. Even though Ballinger and Irvine (1999) in their audit of medication charts have noted that injections were not refused, this finding should be read with caution as often injections are enforced and are therefore not likely to be recorded as refused on the charts.

(vi) **Involvement in legal / criminal activity**

Only one study (Hayman 1981) in a forensic setting, found out that patients with life sentences tended not to refuse medications. There is lack of conclusive evidence on the influence of preadmission legal involvement on refusal of medication.

(vii) **Previous admissions / hospitalisations**

Eleven studies (Appelbaum and Gutheil 1980; Hayman 1981; Bloom et al 1984; Zito et al 1985; Rodenhauser et al 1987; Bloom et al 1988; Schwartz et al 1988; Smith 1989; Sellwood and Tarrier 1990; Littrell et al 1994; Kasper et al 1997) have found that patients who refused medication have higher number of previous hospitalisations compared to those that accepted medication. Following a univariate analyses, Sellwood and Tarrier (1990) indicate that the very non-compliant and compliant groups were significantly different in the number
of previous admissions. In addition, Rodenhauser et al (1987) indicate that the rate of refusal of medication increased linearly with the number of previous hospitalisations.

One comparison study (Hoge et al 1990), however found that that the refuser and control (acceptor) groups did not differ significantly on measure of number of previous hospitalisations. Though this study is similar to Kasper et al (1997), mentioned above, it has generated a contradictory outcome. The difference in outcome between the two studies (Hoge et al 1990; Kasper et al 1997) with similar methodologies could be explained by dissimilarities in sample sizes (n = 1434 vs 348), with the former having the largest sample size of all the studies reviewed. In addition, the sample in the study by Kasper et al (1997) is different from the Hoge et al (1990) study, as it was composed of a chronic group of patients, with 91% having been previously hospitalised, with a median of 3.4 prior hospitalisations.

It is likely that those who have refused medication in the past are likely to refuse medication in the future. It follows therefore that those who refuse medications would have a number of previous admissions compared to those who accept medication.

(viii) **Past history of medication refusal**

Those who have refused medication in the past are likely to refuse medication in the future. Two comparison studies (Hoge et al 1990; Kasper et al 1997) indicate that there was a strong relationship between the history of prior refusal and the current refusal as determined from the chart review ($\chi^2=19.3$, $df=1$ vs $\chi^2=15.8$, $df =1$, $p= 0.001$). These two comparative studies demonstrate relatively strong evidence for the influence of history of refusal on the current refusal behaviour.

(ix) **Other patients’ features associated with medication refusal**

Some of the patients’ features associated with medication refusal that are not covered under the sections above have also been discussed. Baker et al (2009) have identified additional patient features that influence the refusal of medication. For instance, the availability of ancillary services in the community was associated with variations in rates of medication refusal (Baker et al 2009). The influence of additional features of patients associated with refusal of medication requires further examination.

(x) **Interactions between age & gender**

Following a univariate analysis, Sellwood and Tarrier (1994) indicate that Afro-Caribbean women in the very non-compliant group were older than the men. The authors also point out that in the non-compliant group, generally Afro-Caribbeans were younger than non-Afro-Caribbeans. Another study (Bloom et al 1984), also found that women refusers were older, with mean age of 40 compared to 32 for the men. Though inconclusive due to paucity of studies, available evidence points to the influence of the interaction between gender and age on refusal of medication with older women likely to be refusers in comparison to men.
(xi) **Other interactions:**

(i) **Interactions between gender and marital status:**
Only one study (Bloom *et al* 1984) has explored the interaction between gender and marital status *vis a vis* refusal of medication. This study indicated that male refusers (*n* = 6, 15%) were significantly more likely to be single than female refusers (*n* = 29, 67%). The evidence for the interaction between gender and marital status is inconclusive.

(ii) **Interactions between gender and ethnicity:**
The interaction between gender and ethnicity has also been explored by one study (Sellwood and Tarrier 1994). Afro-Caribbean men were more likely to refuse medication and that to some extent these effects were additive as a combination of gender and ethnicity produced a 31% chance that a male Afro-Caribbean would persistently refuse medication (Sellwood and Tarrier 1994). Following a multivariate analysis, the significance of the interaction between ethnicity and gender in predicting refusal of medication in this particular study sample was strong. However this was only one study, and analysis focussed only one ethnic group, leaving a large gap in the evidence on ethnicity and refusal.

(iii) **Interactions between gender and living arrangements:**
Though not statistically significant, Bloom *et al* (1984) found that more men than women refusers of antipsychotic medication lived with nuclear families. As such there is suggestive evidence to deduce the effect of the interaction between gender and living arrangement on refusal of medication.

(iv) **Interactions between gender and diagnosis:**
One study has attempted to address the interaction between gender and diagnosis among refusers of medication. Bloom *et al* (1984) found, with statistical significance, that male refusers were likely to have been diagnosed with schizophrenia compared to female refusers. They found that thirty six men (92%) were schizophrenic, and 3 (8%) had an affective disorder, while 29 (67%) women were schizophrenic, 13 (30%) had an affective disorder, and one was organic (2%). As this was only one study, the evidence is inconclusive.

(xii) **Interaction between dose of medication and diagnosis**
Only one study (Zito *et al* 1986) has investigated the interaction between diagnosis and dose of antipsychotic medication. Zito *et al* (1986) found that diagnosis had an effect on the average dose of antipsychotic medication prescribed at the time of discharge for bipolar, schizoaffective disorder or schizophrenia. The bipolar patients received a minimal dose of about 400mg Chlorpromazine equivalents per day regardless of their refusal status. The data support the clinical inference that both diagnosis and the patient’s refusal contributed to reduced daily antipsychotic dosages. The case of either schizophrenia (755 mg vs. 1872 mg Chlorpromazine equivalent) and schizoaffective disorder (847 mg vs. 1700 mg Chlorpromazine equivalent) consenting to treatment resulted in twice as much daily dosage as similarly diagnosed refusers. However, the situation was reversed for patients with atypical diagnosis, some of who had a history of drug abuse, where refusers in this group received more doses (1557 mg vs. 570 mg Chlorpromazine equivalents for refusers and consenters respectively). The evidence for the influence of interaction between dose of medication and diagnosis on refusal of medication is still inconclusive.
Three studies (Levin et al 1991; Hoge et al 1990; Kasper et al 1997) have variously reported the mean length of refusal episodes, ranging from 2.8 days to 13 days, with an average of 7.17 days. Hoge and colleagues (1990) who conducted their study in a State with rights-driven judicial model, found that majority of patients (n=50, 53%) refused medication for one week or less while 67 (71%) refused for no longer than 15 days with the mean length of refusal episode being 13 days; modal patient refusing for 2 days. A similar study (Kasper et al 1997), though carried in State with a treatment-driven judicial model, has reported the shortest mean length of refusal (2.8 days) which was skewed (skewness, 4.4) by one refusal episode that lasted 21 days. Another study by Levin et al (1991) under a similar judicial model and in private hospital, has reported that refusers spent an average 5.7 days un-medicated ranging from 1 to 13 days.

The evidence for the duration of an episode of refusal is inconclusive and varies widely. However, it is likely that the judicial model has influenced the duration of medication refusal.

The evidence available from three studies (Hoge et al 1990; Levin et al 1994; Kasper et al 1997) indicates that refusal of medication is likely to begin on the first day of admission. Hoge et al (1990) found that the greatest number of refusals began on the day of admission, followed by the day after admission, and lastly by the second day after admission. In fact sixty-one percent of refusals began within 72 hrs of admission to the units. Hoge et al (1990) found that the mean number of days between admission and refusal (6.8 days, SD=13.8) is skewed (skewness, 4.18) by the presence of 2 patients who did not refuse until more than 70 days after admission (73 and 91 days, respectively). Kasper et al (1997) also found that the greatest number of refusals began on the day of admission, followed by the day after admission with 44% of refusals beginning 72 hours after admission. Kasper et al (1997) also found that the mean number of days between admission and treatment refusal (6.8 days, SD=12.3) is skewed (skewness, 2.9) by the presence of two patients not refuse until more than 30 days after admission (38 and 64 days respectively). Thus median (a better measure of central tendency in such cases) number of days from admission to refusal for the two comparison studies is 2 days (Hoge et al 1990) and 5 days (Kasper et al 1997). Levin et al (1994) also found that refusers were most likely to decline medication on the first day of their admission.

One of the consequences of refusal of medication is that patients who refuse medication are admitted for relatively longer periods of time compared to those who accept medication. Nine studies (Bloom et al 1984; Zito et al 1985; Rodenhauser et al 1987; Hoge et al 1990; Levin et al 1991; Urrutia 1994; Littrell et al 1994; Panzano and Rubin 1995; Kasper et al 1997)
indicate that medication refusers are more likely to stay in hospitals twice as long as acceptors of medication.

There is however, a variation on the mean length of admission of medication refusers. Four studies (Zito et al 1985; Hoge et al 1990; Urrutia 1994; Littrell et al 1994; Kasper et al 1997) in non-forensic settings have reported mean lengths of admissions for refusers ranging from 21 to 200.5 days. Data from three studies (Hoge et al 1990; Littrell et al 1994; Kasper et al 1997) indicate that refusers of medication stay longer than acceptors for an average of 19.5 days, with a range from 17.64 to 41.3 days.

Contrary to the above, some studies (Zito et al 1986; Smith et al 1989; Sellwood and Tarrier 1994; Panzano and Rubin 1995) have indicated that medication refusers spend less time in hospital in comparison to non-refusers. Sellwood and Tarrier (1994) following a univariate analysis indicate that the very non-complaint group spent significantly less time in hospital over the three years. Smith et al (1989) also found that refusers had the shortest average length of stay at the forensic psychiatric centre.

In between the above two opposing findings are the two studies (Hayman 1981; William et al 1988), all in forensic hospitals, that have found no significant differences between acceptors and refusers on length of hospitalisation.

The studies (Bloom et al 1984; Zito et al 1986; Rodenhauser et al 1987; Hoge et al 1990; Levin et al 1991; Littrell et al 1994; Kasper et al 1997) have identified various factors, discussed below, that interact with medication refusal to influence length of admission:

(i) **Length of medication refusal episode:** Two comparison studies (Hoge et al 1990; Kasper et al 1997) have differed on the average length of admission (49.4 days vs 109.2 days). It is therefore plausible that the length of admission is influenced by the length of refusal episodes as the mean length of refusal episode was longer in Hoge et al (13 days) compared to Kasper et al (2.8 days) with refusal being overridden faster in the latter through involuntary medication. From the two studies it appears that the shorter the length of medication refusal episode, the longer the length of admission. However, one study (Levin et al 1991) found that the longer the duration of medication refusal, the greater the length of a patient’s stay.

(ii) **The model of jurisdiction / treatment philosophy:** Another factor that has also influenced the length of hospitalisation is model of jurisdiction as regulation of treatment refusal and / or the treatment philosophy is influenced by “rights-driven” and “treatment-driven” approaches. While patients have the right to refuse treatment under rights-driven model if they are competent and in this case refusal can only be overridden through a judicial review via the courts, under treatment-driven model, a patient’s refusal can be overridden by either the treating psychiatrist or if a second reviewing psychiatrist opines that the patient is likely to cause serious harm to himself or others or, to suffer serious deterioration unless the proposed treatment is immediately initiated or administered. Two studies (Hoge et al 1990; Kasper et al 1997) conducted in these opposing jurisdictions have yielded conflicting outcomes. In one study (Kasper et al 1997), carried out treatment-driven jurisdiction model, 56% of patients’ refusal of medication ended with forced medication,
while 44% voluntarily reaccepted medication. But in another study (Hoge et al 1990), a smaller proportion of patients were subjected to forced medication (18%) compared to the patients that voluntarily accepted medication (50%) and those that never received any medication (23%). In this study, refusers who were forcibly medicated presented with less positive profiles like longer length-of-stay in hospital compared to those whose refusals are upheld and those who subsequently accept medication voluntarily. But this was attributed to the length of time it required to move them through the judicial review process, rather than forced medication per se. On the other hand in two other studies (Bloom et al 1984; Kasper et al 1997) study, refusers who were treated involuntarily had significantly shorter refusal periods and briefer hospitalisations than those treated voluntarily. This is partly because medication refusal is overridden faster through forced medication in the treatment-driven model (Kasper et al 1997) resulting in shorter length of admission. The impact of these two systems in medication refusal vis a vis forced medication has not been conclusively discussed. Though the evidence is inconclusive, there is possibility that forced medication leads to positive outcomes in acute psychiatry in terms of shorter lengths of both refusal and admission.

(iii) Involuntary / forced treatment: It appears that in Kasper et al (1997) study (treatment-driven model) patients who are were treated involuntarily had significantly shorter periods of hospitalisation than patients who were treated voluntarily. On the other hand, Hoge et al (1990) study (rights-driven model) demonstrates that patients who were involuntarily treated had the longest length of stay of any outcome group, partly because the process of override is cumbersome as it takes many days to move refusers through the judicial process. Rodenhauser et al (1987) has also reported that the patients treated involuntarily had a longer length of admissions as the proportion of individuals receiving medication involuntarily also increased linearly with length of hospitalisation. The length of refusal in Kasper et al (1997) study is longer than that reported by Levin et al (1991) whose study was also carried out in a treatment driven jurisdictions. However, the length of refusal could also have been influenced by the type of the hospital, a private facility, which was under pressure to treat patients and discharge them more quickly through expedient medication-focused care. In another study (Rodenhauser et al 1987), a comparison of the median length of hospitalisation for the statistically significant variables (medication refusal, involuntary medication) revealed that median length of hospitalisation was significantly higher among refusers than non-refusers, and among those medicated involuntarily than voluntarily.

(iv) Type of healthcare setting: The mean length of admission for refusers of medication is significantly longer in forensic settings (Rodenhauser et al 1987) with the median length being 148 days and for nonrefusers was 78 days. Though there is a difference between refusers and non-refusers in the comparison of median length of hospitalisation no significant difference was found between refusers who were forcibly medicated and those who were not. Levin et al (1991) who also assessed the impact of remaining un-medicated found no significant relationship between the number of days un-medicated and length of stay.

(v) Diagnosis: Diagnosis is another variable that has confounded the impact of refusal on length of admission. Following an analysis of variance demonstrating the relative importance of diagnosis and refusal status as predictors of mean length of hospitalisation in refusers and
consenters, Zito et al (1986) indicate that schizophrenic patients were hospitalised for longer periods than bipolar patients regardless of refusal status. Littrell et al (1994) found that psychotic persistent refusers stayed longer than affective and other diagnostic groups. Rodenhauser et al (1987) also found that diagnosis influenced the length of stay with psychotic patients being admitted longer.

(vi) The length of time between admission and commencement of refusal: It also appears that the length of time between admission and the commencement of refusal of medication influenced the length of admission as well. For instance, Bloom et al (1984) found that patients who refused medication from the time of admission had significantly shorter stays than those who were intermittently compliant or who refused later during the period of admission. This is because patients who refused medication from admission were overridden much more quickly and discharged in a shorter period of time than other groups.

Even though there is conclusive evidence that refusers of medication are hospitalised longer than acceptors of medication, other variables that interact with medication refusal influence the length of admission. Such factors include the period it is takes before a patient is either convinced or forced with medication, the treatment philosophy or model jurisdiction that governs the handling of refusal of medication, the length of time between admission and the commencement of refusal episode, length of medication refusal episode, diagnosis, involuntary / forced treatment, negotiation skills of the healthcare professionals, the prescribing culture and skills, medication administration skills, type of hospital (private, state, forensic) and diagnosis have not been explored exhaustively.

6. Time of medication refusal

In one study (Ballinger and Irvine 1999) it was found that refusals occurred relatively at all times of the day. For instances in one month's sample, 39% of refusal occurred in the morning, 27% in the afternoon and early evening, and 34% at night. On the other hand, Hayman (1981) has indicated that most refusal of medication occurred on Fridays and Mondays. As such temporal factors in the refusal of medication that could have implications for medication prescribing and administration have not been explored hence evidence for their impact is inconclusive.

7. Attitudes towards treatment / hospitalisation

Research indicate that patients who refused treatment differed dramatically from acceptors in their negative attitudes toward their illness, and past, present, and future treatment / hospitalisation at the time of admission (Marder et al 1984; Hoge et al 1990; Kempt et al 1996; Kasper et al 1997). Hoge et al (1990) importantly notes that the attitudes were present shortly after admission and could be good predictors of refusal. In addition, it is plausible that poor attitude of prospective refusers also delayed their admission. These findings support the suggestion that clinicians may be able to identify potential treatment refusers early and proactively target them for intervention to avert treatment refusal. These questions which have been asked during research but are not always routinely asked in clinical practice, are important as they are likely to identify potential medication refusers. Marder et al (1984) through direct interview of involuntarily admitted patients on a 72-hour
hold found out that they would refuse medication if given the opportunity to do so. Influenced by the severity of their symptomatology, they had a negative attitude towards treatment. Kemp et al (1996) through analysis also found that patients’ attitudes to treatment had a bearing on compliance with medication. The available evidence indicates that medication refusers would have a negative attitude towards the index hospitalisation, past admissions, and treatment and will have a poor understanding of their illness.

8. Impact of medication refusal on the ward milieu

Three studies (Hoge et al 1990; Levin et al 1991; Kasper et al 1997) have investigated the effect of refusal of medication by patients on the ward atmosphere. A Hoge et al (1990) study asked doctors about their impression of the effect of medication refusal on patients and ward milieu. The clinicians indicated that refusers had negative impact on the ward which extended beyond the refusing patients themselves to the whole treatment setting (Hoge et al 1990).

Another study, Levin et al (1991) indicated that medication refusers had higher behavioural acuity ratings when compared with non-refusers. They compared the average daily acuity ratings for all the three wards for six months to examine any changes in the total ward milieu and found that refusers had a significantly negative impact on the overall ward milieu. Using the total number of patients’ acuity ratings as the unit of analysis, the average behavioural acuity on the wards before the judicial ruling that gave the patients in California the right to refuse medication, and six months after, was 3.6, rising to 3.7 after the ruling, a statistically significant difference with clinical significance given that involuntary patients represented less than 10 percent of the entire ward population, and medication refusers represented only 15.6 percent of the involuntarily hospitalised patient population, yet had a significant level of behavioural acuity of the ward.

Appelbaum and Gutheil (1980) have reported that refusers of medication shared information and advice about the possibilities and consequences of refusal. This has the potential of having either negative or positive effect on refusal of medication. However, the above studies did not determine the impact of the information sharing on medication refusal has not been investigated.

Because refusers were more behaviourally acute on the ward than acceptors they were more disruptive and had significant negative impact on the overall ward ambience than medication accepters (Hoge et al. 1990; Levin et al 1991). The negative impact on the ward milieu was evidenced by disruptive behaviour, assaultediveness, withdrawn demeanour, and psychotic behaviour (Hoge et al 1990; Levin et al 1991; Kasper et al 1997).

9. Resolutions / outcomes of medication refusal

In acute psychiatry, the expected outcome of refusal of medication is the reacceptance of, and long-term compliance with, medication. The pathway to reacceptance of antipsychotic medication by patients who have refused medication can take various forms; the involuntary medication with or without a court order or following a clinicians’ override and voluntary acceptance of medication.
The studies reviewed were carried out under diverse jurisdictions, and that influenced the pathway taken towards resolution of treatment refusal. Since under the treatment-driven model clinicians have discretion to override refusal of treatment, refusal episodes were resolved quickly in favour of treatment and patients refused treatment for an average of 2.8 days (Kasper et al 1997). In comparison to rights-driven model, which requires judicial review of involuntary treatment, refusal episode lasted 13 days before medication was administered (Hoge et al 1990). It emerged that under the treatment-driven model, involuntarily treated patients, compared to those treated on a voluntary basis, had a better outcome as reflected in shorter refusal episodes and brief hospitalisations. In rights-driven model (Hoge et al 1990) involuntarily treated patients had worse outcomes, as reflected in longer refusal episodes and longer hospitalisations.

The antipsychotic medication refusal outcomes / resolutions could be divided into three categories:

(i) Voluntary reacceptance: There are instances where refusal of medication has been resolved through voluntary acceptance or reacceptance of medication. In Hoge et al (1990) study 50% (n= 49 out of 98) of completed refusal episodes ended with voluntary reacceptance of treatment while an additional 5% (n=4) of patients voluntarily reaccepted medication after receiving involuntary medication in emergency (chemical restraint). In Kasper et al (1997) study 44% (n=18 out of 41) of the patients voluntarily accepted medication. In Kasper et al (1997) 4.88% (n=2) of the refusers accepted medication after changes were made to their medication. In Levin et al (1991) study, 5 out of 37 patients began to take medication voluntarily after an order by the court.

(ii) Involuntary treatment: In some cases refusal of medication has been resolved through forced medication following court order or administrative review. In most studies (Rodenhauser et al 1987; Hoge et al 1990; Levin et al 1991; Sellwood and Tarrier 1994; Urrutia 1994; Kasper et al 1997) it is reported that refusals have often been resolved through involuntary medication. In Hoge et al (1990) study 18% of medication refusals were resolved under court order by a judge while in Kasper et al (1997) treating psychiatrists authorised treatment as necessary in 39% of refusal episodes. In addition, Kasper et al (1997) 56% of cases of refusal episodes ended with involuntary treatment, with 17% of reaccepting medication following the obtainment of consent to treatment through routine procedures in which authorised representatives consented to treatment. In one study (Urrutia 1994) patients who admitted involuntarily were most likely to be medicated involuntarily (n=22 out of 27); while in Levin et al (1991) study in a private hospital, 31 out of 37 refusers were medicated involuntarily. In this study, of the patients (n=31) who were medicated involuntarily after an order by the court, five began to take medication voluntarily after the petition for court was filed, and one patient was discharged before the court review. However, once involuntary medication was initiated, most patients switched to voluntary medications.

(iii) No further treatment with antipsychotic medication: In Hoge et al (1990) study, 23% (23/98) of the refusers never received medication as some 12 patients had their medications discontinued while still in hospital; a further 11% were discharged, never having reaccepted
medication. In the Kasper et al (1997) study, carried out in treatment-driven model of jurisdiction, all the patients were treated. In Kasper et al (1997) however, some patients who refused medication were transferred to the state hospital for further treatment. Urrutia (1994) indicates that many refusers were transferred to the state hospital for further treatment.

No significant differences were found between the involuntarily and voluntarily treated patients on demographic or diagnostic variables, legal status, history of refusal, admission BPRS scores, or attitudes toward treatment (Hoge et al 1990; Kasper et al 1997). In the Hoge et al (1990) study, no significant differences were noted among the above three outcome groups on variables related to the aftermath of refusal including assaults and the use of seclusion and physical or chemical restraint. However, patients who were treated involuntarily had significantly shorter refusal periods, briefer hospitalisations, than patients who were treated voluntarily, and had had fewer previous hospitalisations and shorter refusal periods than those who voluntarily resumed treatment (Kasper et al 1997). Some of these outcomes are however contradicted by two studies (Hoge et al 1990; Panzano and Rubin 1995) who found that those refusers who were involuntarily medicated are hospitalised longer.

Reasons given by physicians for involuntary medication following hospital’s administrative review included potential violence, severe delusional thinking, and gross confusion or a combination of these symptoms, with violence being the best predictor (Kasper et al 1997). Kasper et al (1997) study the duration of forced medication varied from one to 20 days, with an average 4.9 days. Most of the administrative review was done in five days; none exceeded 10 days. The length is longer in Hoge et al (1990) where the mean number of days between refusal and the decision to seek a hearing was 4.8 (SD=8.1). A mean of 11.8 days (SD=8.1) elapsed between the decision and actual filing of court papers, a further 16.5 days (SD=7.1) passed before the requested hearing took place. Thus the mean interval between refusal and a hearing on involuntary treatment for those cases in which that occurred was 36.7 days.

There is inconclusive evidence on the outcomes and resolutions of treatment refusals as the factors that influence each resolution pathway have not been extensively explored. From the literature it is indicative that the judicial model influences the refusal outcome and how long it takes before refusal is resolved.

10. Relationship between medication refusal and other types of conflict


Refusers as a group had higher rates of assaults and threats of assault than acceptors group (Zito et al 1985; Smith et al 1989; Hoge et al 1990; Levin et al 1991; Kasper et al 1997). Medication refusal was also positively related to previous episodes of threatening and

On the other hand, actual or threatened harm to self did not differ between the groups (Zito et al 1985; Hoge et al. 1990; Kasper et al 1997). Zito et al (1985) also found that there were no significant differences between refusers and acceptors of medication on additional negative behaviours such as property destruction.

Following a multilevel modelling, Baker et al (2009) found that certain conflicts were strongly related to medication refusal such as the refusal to comply with staff requests or behavioural requirements. In addition, patients who were admitted for reasons of harm to self (including vulnerability and the capacity to neglect self-care, as well as suicide risk) were less likely to refuse medication (Baker et al 2009). Zito et al (1985) also found that refusal of medication was negatively associated with previous suicide attempts and self-reported drug abuse.

Only one study, Smith et al (1989) has reported that medication non-compliance was not associated with potential violent behaviour toward others, actual or attempted violent behaviour towards self. This could be attributed to the scale of security and solitude which characterises secure forensic hospitals.

**Restraint and seclusion:** The definition of restraint and seclusion was not been provided by the studies. In one study (Rodenhauer et al 1987) use of seclusion is merged with restraint whose definition encompasses two forms: leather cuffs that restrain the wrists to the waist, and seclusion is defined as involving two-, three-, or four-point (limb) restraint to a stationary bed. The studies have also not differentiated the types of restraints, that is, physical and chemical variants. Hoge et al (1990) and Kasper et al (1997) have divided restraint into physical and chemical. Though physical restraint has not been defined, chemical restraint refers to use of emergency medication. The following discussion has not been able to specify the type of restraint used unless clearly stipulated by the authors.

Studies have also indicated that medication refusers had higher rates of physical and chemical restraints and use of seclusion (Bloom et al 1984; Hoge et al 1990; Levin et al 1991, Littrell et al 1994; Panzano and Rubin 1995; Kasper et al 1997).

In the comparison studies (Hoge et al 1990; Kasper et al 1997), when restraint was reviewed, refusers were significantly more likely to be restrained whether the technique employed in question was seclusion, physical restraint, or chemical restraint, than control patients. In addition, patients who refuse treatment were in seclusion or restraints more, and longer periods of time than were those in the comparison group (Hoge et al 1990; Levin et al 1994; Kasper et al 1997). Rodenhauser et al (1987) study in forensic setting, found that patients who refused medication were more likely to have been restrained (and secluded) than patients who did not refuse medication, and patients receiving medication involuntarily were more likely to have been restrained than patients who did not receive medication involuntarily.
An interaction between multiple administration of emergency medication (chemical restraint) and refusal has been found (Panzano and Rubin 1995). In their analysis (Panzano and Rubin 1995) found that non-consistent non-refuser group required significantly more administration of emergency medication on the average than the consistent refusers and non-consistent refusers. However, there was no difference between the average number of emergency medication administrations required by the consistent refuser group and the consistent non-refuser group.

In Littrell et al (1994) study, a Kruskal-Walis one-analysis of variance (ANOVA) indicate that non-persistent refusers with a psychotic diagnosis experienced a higher number of episodes of restraint and seclusion, and spent more total time in restraints than did non-refusers.

In the Levin et al. (1994) study, locked seclusion was often required by medication refusers due to a combination of verbal threats, physical assaultiveness, and physical destruction of their environment while none in the accepting group. In their assessment of the impact of medication refusal, Levin et al (1994) found no significant relationship between the number of days un-medicated and the number of seclusions. However, the significant findings suggest that as functioning level increases, the length of stay decreases but the number of times in seclusion increases.

Zito et al (1985) found no statistically significant differences between refusers and consenters on the variables such as need for physical restraint and seclusion and additional negative outcomes such as having to be transferred to a locked unit. Bloom et al. (1984) study reports that even though there were a total of 183 separate episodes of seclusion, emergency use of medication, and restraint applied to the refusers during the period of refusal up to override, these measures were not significantly more frequent than for non refusers.

As discussed previously, refusers of medication are admitted longer than those who accept medication. It follows therefore that the longer the length of admission the more incidences of restraint and seclusions the refusers would be involved in comparison to acceptors of medication. In the study by Rodenhauser et al (1987), the proportion of individuals who were restrained increased linearly with length of hospitalisation.

From the evidence, refusal of medication contributes to the use of restraint, be it chemical or physical, and seclusion due to threats of, or actual, violence and aggression. However, a longitudinal analysis would also indicate that patients who constantly shift in their status probably pose more problems in their treatment than those who consistently refuse or accept medication. Despite the refusers being more likely to require seclusion and restraint, following a longitudinal approach, patients that constantly shift between refusal and acceptance of medication (non-consistent non-refuser) that were involved in significantly more seclusion and restraint events on the average than consistent refusers (Panzano and Rubin 1995).

**Interactions between medication refusal and other conflict behaviours:** Zito et al (1985) found out that there were no statistically significant differences between refusers and consenters on the variables such as impairment in activities of daily living, impairment in
nutritional status, non-participation in treatment programs, and unauthorised absences. A comparison of the additional negative behaviours such as self-injury, suicide attempts, and lack of cooperation with admission workup which are indicative of possible harmfulness to self also revealed no significant differences between refusers and consenters. However, Smith et al (1989) also found that refusal of medication was strongly associated with refusal to eat.

The impact of staff factors on medication refusal: Use of non-regular (agency / temporary) staff was associated with higher rates of medication refusal (Baker et al 2009). Such staff would not be able to inculcate therapeutic relationship and familiarity with patients. In fact Marder et al (1984) found that ratings of confidence in ward staff were significantly higher in accepters than refusers. During a two-week follow-up the confidence in staff increased positively as the patients’ psychopathology and attitudes towards drugs changed. Schwartz et al (1988) found that refusal is also influenced by struggles with staff or family, and other transient situational factors. Additionally, Appelbaum and Gutheil (1980) speculated that some patients refused medication as a reaction to intolerable feelings of closeness to staff. As such refusal of medication was a means of pushing staff away and not wanting to develop a therapeutic relationship them. Another staff feature that was related to medication refusal was the provision of an ineffective structure for the ward, as measured by ward atmosphere scale (WAS) (Baker et al 2009). Wards that lack structure would be characterised by chaotic atmosphere which results in production of many conflict behaviours such as aggression, violence, self-harm, absconding, and substance misuse which are all related to medication refusal. These conflict behaviours form complex and intertwined patterns of interactions in acute psychiatric wards (Bowers et al 2003).

11. Relationship between medication refusal to other containment measures

Two studies (Appelbaum and Gutheil 1980; Baker et al 2009) have produced results indicating a relationship between refusal of medication and other measures of containment of conflicts in acute psychiatry. One study (Baker et al 2009) found that the rate of refusal of medication on wards was associated with doors being locked, and with restrictions on patients (e.g. locked bathrooms, kitchens, cupboards, provision of plastic cutlery and dining ware) and the initiation with all types of special observation. Appelbaum and Gutheil (1980) also found that some patients refused medication because of their angry responses to tight spaces and administrative restrictions. These two studies indicate that restrictive rules and ward environment are likely to generate a reaction by patients by way of a resistance through medication refusal.

12. Cost of medication Refusal

One study (Bloom et al 1984) has alluded to the considerable costs associated with refusal of medication. The estimates in this study, though not inclusive of all costs, have been based on the number of days taken to override refusal. The difference between the length of stay for refusers and all court committed patients was about 14.1 days at a daily cost of US $128 (Bloom et al 1984). Another study (Rodenhauser et al 1984) indicate that based on the 1984 estimates, the hospital cost of care is US $249.53 per patient per day. Therefore, the difference of 70 days in median length of hospitalisation between refusers and non-refusers
suggests that the typical refuser costs the State about US $17, 467 more than the typical non-refusser. Though they did not compute the cost, Hoge et al (1990) indicated that the costs of refusal in terms of resources expended on extended hospital stays and disruption of the treatment milieu in their study were substantial. A robust estimate of the cost of medication refusal that goes beyond the number of extra days and looks at the cost of extra staff, medication wasted, staff absences and injuries, and destruction of hospital property is overdue.

13. Patient’s attitudes, perceptions and motivations

The attitude and perceptions of patients were assessed in different ways. While two studies (Hoge et al 1990; Levin et al 1994) asked patients directly for their attitudes and perceptions, four other studies (Hayman 1980; Marder et al 1984; Schwartz et al 1988; Kasper et al 1997) have derived these from patients’ notes and records. Two additional studies (Appelbaum and Gutheil 1980; Littrell et al 1994) used a combination of the above two methods. Following content analysis, reasons for refusing medication has been divided into thirteen groups:

(i) Illness denial
Eight studies (Appelbaum and Gutheil 1980; Schwarz et al 1988; Rodenhauser et al 1989; Hoge et al 1990; Levin et al 1994; Littrell et al 1994; Urrutia 1994; Ballinger and Irvine 1999) have indicated that patients’ justification for refusal of medication is influenced by lack of insight into their illnesses which often translates into a denial of their illness experiences. Two studies (Hoge et al 1990; Kasper et al 1997) found that future refusers were significantly less likely to acknowledge their illness and need for treatment than were control patients. In one study (Levin et al 1994) when patients were asked about their refusal of medication, their typical response was denial of illness and lack of insight typified by: 'Look I do not need medication. There is nothing wrong with me'.

(ii) Delusional reasons
Some refusal of medication by patients has been attributed to delusional reasons (Appelbaum and Gutheil 1980; Schwarz et al 1988; Rodenhauser et al 1989; Hoge et al 1990; Levin et al 1994; Littrell et al 1994; Urrutia 1994; Kasper et al 1997; Ballinger and Irvine 1999), paranoid fears (Hayman 1980), severe confusion (Schwartz et al 1988), and suspicions about the meaning and intended effect of medication (Rodenhauser 1984). The following typical responses to concerns with medication have been reported by some studies: 'Satan is telling me not to eat and not to take any medication' (Appelbaum and Gutheil 1980; Rodenhauser et al 1989; Hoge et al 1990); and ‘Staff’s trying to kill me’ (Hayman 1980).

(iii) Concern about medication side-effects
Though some studies have indicated that there is a correlation between experience of extrapyramidal side-effects and failures in compliance, its significance is still not very clear. The six studies (Appelbaum and Gutheil 1980; Hayman 1980; Rodenhauser et al 1987; Schwartz et al 1988; Hoge et al 1990; Levin et al 1991; Littrell et al 1994) that have found that experience of side effects of medication in the past influenced patients’ future behaviours towards medication often cite concern with side-effects of antipsychotic
medication as the reason why they refuse medication. Kemp et al (1996) study suggested that extra-pyramidal side-effects of neuroleptic drugs had a bearing on compliance.

Two of these studies (Hayman 1980; Hoge et al 1990) indicated explicitly that concern with side-effects was the most cited reason of refusal of medication. Particularly, Hayman (1980) indicates that concern over currently experienced or anticipated noxious side-effects was the most frequent reason given by patients (31%) for refusal. He points out that patients would express their reasons for medication refusals with expressions such as: "It makes me feel lightheaded, blurs vision", "It gives me an upset stomach", "It makes me gain weight", "It makes my mouth and tongue dry". The impact of experience of side-effects as the reason for medication refusal has not been unequivocally established.

Two studies (Marder et al 1983; Marder et al 1984) have contradicted the above results as they did not find any difference in concerns with severity of side-effects in refusers compared with compliers. Additionally, Marder et al (1984) also found that there were no differences between treatment acceptors and refusers in history of medication side-effects on ratings on the Medication Attitudes Scale.

(iv) Refusal of medication due to preference of alternative therapy
Patients have also refused medication because they preferred an alternative therapy to antipsychotic medication, e.g. megavitamin therapy (Appelbaum and Gutheil 1980).

(v) Contamination/ poisoning
Some patients refused medication citing unwillingness to have their purified bodies contaminated by medication (Appelbaum and Gutheil 1980). In this study, two patients feared that medication was harming them as they were being given incorrect medication. Remotely related to this, Williams et al (1988) point out that some patients refused medication because they saw it as a form of mind control.

(vi) Staff / structural issues
Refusal of medication has also been attributed to patients’ objections to being close to staff and feelings of anger toward the clinician or certain nursing staff (Appelbaum and Gutheil 1980; Hoge et al 1990). For instance one patient consistently refused medication from one particular member of staff (Appelbaum and Gutheil 1980). On the other hand, refusal of medication could also be a means of wanting closer cooperation or interaction with the hospital staff, such as an attempt to communicate to the doctor, using statements such as: "Tell the doctor I refused" (Hayman 1980). Such patients would probably accept medication following the interpersonal intervention by the doctors and nurses. This could be one of the reasons why the use of agency staff, who would not develop a therapeutic relationship with patients, has also been found to influence refusal of medication (Baker et al 2009).

The structural issues like the hospital spaces influence the attitude of patients towards compliance with treatment. Some patients refused medication as a response to feeling enclosed or imprisoned, and administrative restrictions of, the hospital (Appelbaum and Gutheil 1980) and restrictions on movements of patients through locked doors and bathrooms (Baker et al 2009). In addition, stress related to issues such as visitation, phone
calls and anticipated court appearance are reported to influence patients to refuse medication (Rodenhauser 1984)

Some patients also refuse medication because of the fear of getting better which could lead to them losing the support offered by the hospital and staff (Gutheil 1977, 1978). On the other hand, in another study (Hoge et al 1990) a large group of refusers’ reacceptance of medication was motivated by a desire to get released from a hospital and / or a possible transfer out of a locked unit.

(vii) Not wanting to become competent
Some patients refused medication because they did not want to become competent enough to re-establish contact with reality (Appelbaum and Gutheil 1980; Rodenhauser 1984; Williams et al 1988; Rodenhauser et al 1989). Especially in forensic settings, the reality might be very painful, at times with serious consequences. In one study (Rodenhauser et al 1989) some patients refused medication to avoid full awareness of the horror of their criminal acts and this was more prevalent among refusers whose lengths of hospitalisation were longer. In addition, some patients have refused medication to avoid getting better which would lead to discharge thus losing the support that comes with inpatient hospital admissions (Appelbaum and Gutheil 1980). Specifically in forensic settings, refusal is at times motivated by the desire to avoid becoming competent to stand for trial for their criminal acts, and in addition, to avoid the reality of a hostile prison environment (Rodenhauser 1984; Williams et al 1988). Related to this, Williams et al (1988) also point out that some patients, refused medication as a way through which they could gain admission into hospitals, where living conditions are better than in prisons.

(viii) Infectiveness of medication
In four studies (Hayman 1980; Marder et al 1984; Hoge et al 1990; Littrell et al 1994) studies some patients refused medication citing ineffectiveness of antipsychotic medication. While rejecting medication, the patients have used statements such as: "I don't need it anymore", "I do better without it", "It doesn't help", and "I don't need medication" (Hayman 1980). The refusing patients were less likely to believe that drugs had helped in the past and that drugs were important in treating their mental illnesses (Marder et al 1984). In addition, the patients who had negative attitudes towards past, present, and future treatment were more likely to refuse medication compared to acceptors (Kasper et al 1997). As such, the previous knowledge of the efficacy of medication, especially the relationship between medication and the relief from psychotic symptoms would influence future behaviour (Hayman 1980).

(ix) Concern over medication error
Hayman (1980) has reported that some patients refused medication because they had concerns that it was not their medication, typically stating, "It isn't my medication". Additionally, Appelbaum and Gutheil (1980) indicate that some patients refused to accept a different brand of medication from the one that they had been accepting previously.

(x) Rational concern over treatment course
Some patients refuse medication because of lack of knowledge on the prognosis of mental illness or the treatment course. Hayman (1980) indicates that those patients would have
The typical response to the request to have medication such as: "I don't need it. The shakiness is gone" (Hayman 1980).

(xii) Stigma of mental illness
The refusal of medication as a result of stigma of mental illness has surprisingly been mentioned by only one study (Williams et al 1988) carried out in a forensic setting. The study indicates that stigma of mental illness within the prison system influenced some patients to refuse their medication.

(xii) Rights-driven reasons for medication refusal
Some patients have refused medication whilst offering no reasons. This is often attributed to the urge to exercise their right to decline medication (Appelbaum and Gutheil 1980; Levin et al 1991l). Schwartz et al (1988) has also indicated that some patients admitted that they did not know why they refused medication, but acknowledged that it was their right to do so.

As indicated above, patients have refused medication for a variety of reasons. The reasons most cited by the studies include illness denial, delusions, side-effects of medication, ineffectiveness of medication, and structural and staff issues. Whilst some of the reasons could be attributed to the nature of the mental illness, it is clear that most of the reasons and concerns are rational and would require attention in practice. Additional research is needed to investigate further the subjective reasons why patients refuse medication in acute inpatient psychiatry as these are quite important in understanding why patients refuse medication, and why there is poor adherence to medication.

14. Staff attitudes / perceptions of why patients refuse medication

Few studies (Appelbaum and Gutheil 1980; Bloom et al 1984; Rodenhauser et al 1987; Hoge et al 1990; Littrell et al 1994) have explored the staff attitudes and perceptions of medication refusal in acute psychiatry. Information on nursing staff’s attitudes and perceptions is largely lacking.

In response to questions about their perceptions of patients’ reasons for refusal of medication, doctors were less likely to cite side-effects, and more likely to identify interpersonal issues, such as refusers having transference problems or anger toward the clinicians (Appelbaum and Gutheil 1980; Hoge et al 1990). The overall proportion of agreement between the patients’, and the clinicians’, perceptions of the reasons for refusal of medication was only 37% (Hoge et al 1990). Of the patients whose data were available, clinicians often viewed majority as incompetent, and their refusal of medication was attributed to lack of insight, or reduced them to manifestations of the patients’ mental illness especially delusional ideations (Appelbaum and Gutheil 1980; Hoge et al 1990; Littrell et al 1994). The most common reasons cited by the ward physicians for overriding medication refusal include: paranoid and delusional traits of their illnesses; deteriorating and / or unstable mental state; lack of insight; threats to others; physical attack on patients and property; and deteriorating physical condition (Appelbaum and Gutheil 1980; Bloom et al 1984; Rodenhauser et al 1987; Hoge et al 1990; Littrell et al 1994)).
One study (Hoge et al 1990) asked patients' psychiatrists to estimate the effect of each refusal on the patient, on the ward milieu, and on the treatment team. Psychiatrists judged that refusal had a negative influence on the patients' course as refusal precipitated deterioration in some cases, and prevented recovery in most of the patients. In another study (Littrell et al 1994), when asked to rate the likely effect of refusal episode on the patients' conditions, physicians noted the potential effect as either deleterious or substantially deleterious.

The therapeutic relationship between the nursing staff and the patient has been indirectly cited as one of the reasons why patients either accept or refuse medication. In particular Appelbaum and Gutheil (1980) have noted that physicians indicated that patients accepted medication because of their relationship with the day's medication nurse. The authors also report of one patient who consistently refused medication from one particular nurse (Appelbaum and Gutheil 1980). The nurses’ views were not directly gathered.

A few studies have discerned the doctors’ attitudes towards, or perceptions of, the act of, medication refusal and patients that refuse medication. Even though physicians are more likely to attribute the refusal of medication to the patients’ delusional and paranoid symptoms and anger towards clinicians, and less to lack of therapeutic relationships with staff, the patients on the other hand cited mostly side-effects and lack of knowledge on the intended effect of medication. Most of the reasons pointed out by the patients such as concerns with efficacy, stigma, and side-effects, as well as the structural factors such as restrictive hospital space and restrictions on patients’ movements are equally important. A broad range of perceptions of reasons for medication refusal from all healthcare professionals is hugely lacking as nursing staffs’ perceptions of, and the meanings of, medication refusal has not been explored.

15. Evidence for and against the model

Little evidence for or against the working model has been presented by the studies.

Evidence for the working model: Three studies have produced limited evidence that support the working model (Appelbaum and Gutheil 1980; Hoge et al 1990; Levin et al 1991; Panzano and Rubin 1995; Kasper et al 1997; Baker et al 2009). The role of staff and their use of skills in negotiating with patients to accept medication voluntarily (thus not perpetuating the conflict due to medication refusal), though not thoroughly explored, has been alluded to by two studies (Hoge et al 1990; Kasper et al 1997). This suggests that staff relied on the mastery of their technical skills to limit conflict due to medication refusal. In addition, the finding that patients did not blame staff for their refusal of medication indicates that staff factors do not have a strong influence on medication refusal (Levin et al 1991). Moreover having a less restrictive ward environment, an effective ward structure, and the formation an effective therapeutic relationship with patients by having regular staff would decrease the conflict due to medication refusal. The relationship between nursing skills and the refusal of medication is not clear.

On the other hand, Baker et al (2009) found that patients’ refusal to comply with staff requests or behavioural requirements were strongly related to the conflict of medication
refusal. Though not objectively determined, one study (Appelbaum and Gutheil 1980) has alluded to the fact that staff factors influenced the conflict of medication refusal, as one patient refused medication consistently from one staff member. One study (Hayman 1981) has shown how the ‘treatment philosophy’ in one forensic hospital, led staff to inadvertently perpetuate medication refusal by not intervening because partially treating patients might make them less likely to be made subject to detention in the hospital by the courts.

The evidence also suggests that the lack of therapeutic relationship between staff and patients could contribute to the conflict of medication refusal. The unstable staffing levels through the use of agency staff (Baker et al 2009) and certain types of nursing staff being on duty (Appelbaum and Gutheil 1980; Hayman 1980) was related to medication refusal.

One study (Baker et al 2009) has demonstrated an interaction between different containment methods and conflict of medication refusal. Baker et al (2009) found that the rate of refusal of medication on wards was associated with doors being locked, and with restrictions on patients (e.g. locked bathrooms, kitchens, cupboards, provision of plastic cutlery and dining ware) and the initiation of all types of special observation. Appelbaum and Gutheil (1980) also found that medication refusal was associated with restrictive ward features and the general ward environment. In addition, provisions of other containment methods like all forms of supportive observation contributed to medication refusal (Baker et al 2009).

**Evidence against the working model:** The belief in the treatment philosophy that privileges psychotropic medication and the type of the judicial system driven by the same philosophy could affect the conflict due to the refusal of medication. Though there is lack of comparative studies to determine this, indirect results from one study (Kasper et al 1997) carried out in a jurisdiction with treatment-driven judicial model, found that those who were medicated involuntarily had shorter refusal periods and briefer hospitalisation than patients who were treated voluntarily. The practice of involuntary medication would influence refusal rates and shortens the conflicts generated by refusal of medication, thus reducing the cost and outcomes of refusal.

**16. Summary and Discussion**

A total of 21 studies of medication refusal in acute inpatient psychiatry have been reviewed. Nineteen studies have been carried out in the United States of America, in hospital settings governed by either of the two models of jurisdictions, that is rights-driven or treatment driven models. A total of four studies, all carried out in the United States, have been conducted in forensic hospitals. The paucity of studies and restricted regional focus, demonstrates how the refusal of medication has been ignored in health research despite medication being the mainstay of treating acute psychosis, and more importantly, the higher rates, and cost, of noncompliance with medication that is evident in literature and practice. These studies have used various methodologies thus producing divergent results. Three rigorous comparative studies (Hoge et al 1990; Levin et al 1994; Kasper et al 1997) that have attempted to resolve some of the methodological problems by using prospective and randomised procedures to examine the characteristics, course, and impact of medication refusal.
The studies reviewed have defined refusal of medication diversely, thus affecting the calculation of rates of refusal. The rate of medication refusal has also been influenced by the type of admissions and focus of studies. The four studies carried out in generic psychiatric units have generated rates of refusal ranging from 2.01 with an overall average patient-based rate of 6 per month per 100 admissions. On the other hand, the two studies that focused only in involuntary admissions report an average patient-based rate of 16.74. Two studies from forensic settings report an average patient-based rate of 48.4 per month per 100 admissions. One study (Baker et al 2009) has calculated the mean daily rate (event based rate) of refusal of regular medication as 0.89.

The definitions of refusal, diverse as they are, have ignored the nature, frequency, and methods of covert medication refusal through palming and cheeking or pretending to be a sleep. They have not also accounted for the endeavours by staff to circumvent the covert refusal of medication. In practice, psychiatrists at times do not prescribe because the patient has indicated that they would not take medication. Does this patient behaviour account as medication refusal? Would the period before the prescription of medication account as refusal of medication? There are also patients who refuse medication frequently at certain times of the day and the frequency and impact of such refusal is not currently known. Inadvertent refusal could also be due to patient’s cognitive disorganisation, memory impairment or motivational deficits. This amounts to a black hole in medication refusal research and evidence as the extent, scale, and impact, of refusal might not be known until these factors are taken into account.

The characteristics of medication refusers have been unearthed by some studies. Medication refusers have negative attitudes towards the index admission, past admissions and treatment, and had a poor understanding of their illness. This indicates that potential refusers of medication could be identified during admission and appropriate resources could be allocated towards minimising refusal of medication. This assertion is buttressed by the limited evidence that refusal of medication is likely to begin on the first day of admission, with most refusals beginning with the 72 hours following admission, with the mean days provided by two comparison studies being 3.5 days.

Conclusive evidence demonstrates that refusers and acceptors of medication did not significantly differ on certain patient factors such as demographic variables encompassing gender, ethnicity, marital status, and age, and the legal status at admission. Though one study (Sellwood and Tarrier 1994) indicate that the groups were significantly different in terms of gender, the study however, had predominantly large number of Afro-Caribbeans and it is not clear whether ethnicity confounded the influence of gender.

At present, there is inconclusive evidence for the influence of preadmission accommodation and living arrangements, socio-economic status, employment status, and education on medication refusal. Even though having a medical insurance which is directly related to employment negatively influences refusal of medication, it has not been comprehensively explored neither is the effect of the interaction among the above socio-economic factors on refusal of medication.
Evidence also indicates that compared to acceptors, more likely to be diagnosed with schizophrenia and schizoaffective disorder characterised by higher BPRS scores related to psychosis and higher GAF scores, have previous admission / hospitalisation and have a past history of refusal. On the other hand acceptors of medication scored higher on BPRS scores related to anxiety, depression, and guilt. The patients diagnosed with schizophrenia will refuse medication based on delusional ideations and illness denial issues related to symptoms of schizophrenia and schizoaffective disorder. Refusal of medication therefore might reduce through interventions that initially focus on improving the insight of patients and delusional ideations. Refusers are also prescribed higher of doses of medication in Chlorpromazine equivalents than acceptors (Hoge et al 1990; Kasper et al 1997). This could be due to the nature of their symptoms which could have necessitated chemical restraints and containment with medication. However, there was no statistical difference on the prescription of antiparkinsonian medications and the type of prescribed neuroleptic medication.

Though some of the available evidence point to a possible role of ethnicity in medication refusal, the evidence is mixed. While some studies (n=6) have indicated that refusers and acceptors did not differ significantly in terms ethnicity, other studies (n=5) have indicated that ethnicity influenced medication refusal. However the studies with positive effect for ethnicity have differed in their results with regards to the ethnic type. While studies (n=4) have adduced that a greater percentage of Caucasians refused medication compared to other ethnic groups, one study found that patients in the very non-compliant group were likely to be Afro-Caribbean group. Generally, the available studies have not provided an understanding of the influence of ethnicity, and the direction of that influence, and the type of ethnic group likely to refuse medication.

Two studies have determined the interaction between age and gender indicating that women refusers are older than men. In addition, one study found that male refusers were significantly more likely to be single than female refusers. The significance of the interaction between gender and ethnicity has only been demonstrated by one study which found its significance in predicting refusal of medication. In addition, male refusers were likely to have been diagnosed with schizophrenia compared to female refusers.

Though 12 studies have produced evidence that indicate that refusers of medication have a higher number of previous hospitalisations compared to those that accepted medication, and a strong relationship between history of prior refusal of medication and the index refusal. However, additional comparison studies, the extent of the impact of previous hospitalisations on future refusal of medication needs thorough examination.

Empirical analyses have yielded conflicting findings about the effects of refusal on patients. Some studies (n=8) have found that refusers are more likely to stay in hospital nearly as twice as long as acceptors of medication, an average 19.5 days. Other retrospective studies (n=4) have found that medication refusers spend less time in hospital in comparison to non-refusers. While studies (n=2) in forensic settings have found no significant differences between acceptors and refusers on the length of hospitalisation. The findings in forensic hospitals could be due to the nature of forensic hospitals where other factors such as risk of recidivism, length of sentence, the nature of crime, and decisions by the parole boards
influence the length of admission. Based on the United States of America’s estimates of 1984, which put the cost of admission of US$ 249.53 per patient per day, an average cost of US$ 4865.84 represents a huge additional cost per patient. The cost of involvement in violence and aggressions and in restraints and seclusions in terms extra staff, observation hours, and injury to staff, destruction to property, would inflate the above estimate. The patients diagnosed with psychosis also stay longer than other diagnostic groups. However the influence of other variables such as involuntary medication, the length of refusal episode and the period before commencement of refusal of medication has not been conclusively determined by research.

The most common reasons for refusal of medication include illness denial, delusions, side-effects of medication, ineffectiveness of medication, and structural and staff issues. However the evidence of a broad range of perceptions for reasons for medication refusal from nursing staff is hugely lacking.

All refusals of medication are resolved with most refusal episodes ending with voluntary medication, involuntary medication, or discharge with no medication. However the length of time it takes before resolution of refusal is varied. In addition the impact of each type of resolution on the length of hospitalisation has been inconclusively explored as there are factors that could influence the length of admission such as the type of the hospital, as private facilities offer a medication focussed care with the pressure to discharge patients much quickly (Levin et al 1994). The same might apply to state / public hospitals which due to pressure for beds occasioned by lack of resources or policy changes to more community focussed care might discharge patients much quicker. In addition diagnosis has an influence on length of admission as psychotic patients stay longer (Littrell et al 1994; Zito et al 1986; Rodenhauser et al 1984). With these interesting but conflicting findings, more research is needed.

The impact of medication refusal has been discussed in terms of its relationship with other forms of conflict in acute inpatient psychiatry. The conclusive evidence indicate that refusers as a group had higher rates of assaults and threats of assaults, and spent more total time in restraints and higher number of episodes of restraints and seclusion, than the acceptors group. However what seclusion and restraint clearly means was not defined. A definition provided by Rodenhauser et al (1987) though ambiguous, indicates that seclusion is a type of restraint. While in restraint leather cuffs are used to restrain the wrists to the waist, on the other hand seclusion is defined as involving two-, three-, or four-point (limb) restraint to a stationary bed. Two other studies (Hoge et al 1990; Kasper et al 1997) have divided restraint into physical and chemical. Even though physical restraint is not defined, they have referred to chemical restraint as the use of emergency medication. As a starting point, clear definition of restraint and seclusion should be provided. My assumption is that seclusion and restraint and what they entail might mean different things in the United States as they do in the United Kingdom. In addition, certain conflicts such as refusal to comply with staff requests, drug abuse, and previous episodes of threatening and assultive behaviours were related to medication refusal. Even though one study has reported that previous suicide attempts was related to medication refusal, multilevel modelling and analysis (Baker et al 20909) has indicated that patients who were admitted for reasons self-harm including suicide risk were less likely to refuse medication. Could it be because such patients are
diagnosed with affective disorders, and as some previous results indicate would always comply with medication?

There is conclusive evidence that refusers had higher rates of threats of assaults and actual assaults, restraint and seclusion compared to accepters of medication. Due to this refusers, have a negative impact on the overall ward milieu as refusers. Evidence also indicates that previous episodes of threatening and assaultive behaviour, verbal abuse, and violence could be used to predict refusal of medication. The evidence also suggests that certain patient behaviours such as refusal to comply with request from staff, drug abuse, and previous suicide attempts were related to medication refusal.

Patient attitudes towards, and perceptions of, medication refusal have been assessed in different ways. However following a content analysis, patients refused medication for diverse reasons which could be grouped into: factors related to mental illness (illness denial, delusion, stigma of mental illness); factors related to medication / treatment (side-effects of medication, fear of poisoning, concerns over medication error, preference for alternative therapy, concern with treatment course); factors related to patient rights and motivations (exercising of right to refuse medication, avoidance of competence); staff and structural factors (non-regular agency staff, lack of structure on wards, restrictions on patient movements).

The staff’s attitude towards, and perceptions of, medication refusal by staff has not been explored thoroughly. Moreover the research in this area has focussed mainly on the psychiatrists / physicians. Other professionals’ views and perceptions have not been explored.

Even though research evidence indicates that medication refusers are hospitalised longer, further studies are needed to determine the influence of other variables such as the period it is taken before a patient is either convinced or forced with medication, the treatment philosophy or model jurisdiction that governs the handling of refusal of medication, the length of time between admission and the commencement of refusal episode, length of medication refusal episode, diagnosis, involuntary / forced treatment, negotiation skills of the healthcare professionals, the prescribing culture and skills, medication administration skills, type of hospital (private, state, forensic) and diagnosis.

17. Implications for practice

The studies reviewed have generated some outcomes which have implications for clinical practice. The staff factors such as the use of non-regular / agency staff / temporary staff was associated either higher rates of medication refusal. In addition, ineffective ward structure was associated with medication refusal. This implies that having regular staff, and an effective structure on the ward would reduce rates of medication refusal. As it has also been found that ratings of confidence in ward staff was significantly higher in accepters of medication than refusers, having regular staff and the effective structure in place would positively influence the confidence of patients on the therapeutic environment and consequence of this would be reduction in conflicts due to medication refusal. The regularity
of the nursing staff aids the formation of the nurse-patient therapeutic relationships, which has been found to be key in the refusal or acceptance of medication.

There are three pathways to resolution for medication refusal that is voluntary reacceptance, involuntary medication and no further treatment with medication. Currently the evidence is mixed for the two first pathways. Even though refusal of medication contributes to a longer stay during the index medication and involvement in other containments measures, one study (Kasper et al 1997) carried out in a treatment-driven jurisdiction model, found out that refusers who were medicated involuntarily had shorter refusal periods and briefer hospitalisation than patients who were treated voluntarily. This finding though only from one study has implications for practice and psychiatric philosophy. It brings into the fore the debate on the use of involuntary medication and more or less questions the rights of patients with mental illness to refuse medication. However, this is only one study and further evidence is needed as this would have huge implications for practice, the law and the psychiatric philosophy.

The research indicates that rates of medication refusal among involuntarily admitted patients are higher than that of voluntary admitted patients. In addition, involuntarily treated patients had worse outcomes, as reflected in longer refusal episodes and longer hospitalisations. Kemp and colleagues (1996) in their compliance intervention study found that involuntary admission predicted poorer compliance with medication six months later. This indicates that it is cost-effective to admit patients voluntarily, or have a system in place where those who are suffering from mental illness are able to access mental health care before they are more acutely ill. In fact, involuntarily admitted patients are significantly less likely than are voluntarily admitted patients to acknowledge that they are psychiatrically ill and in need of treatment, and their insight is less likely to increase even following treatment (McEvoy et al 1989); and compliance with medication is related to improved insight (Kemp et al 1996). From the evidence, it appears that forced admissions are counter productive for it might protect the patient and the public, but those who are admitted involuntarily are more likely to refuse medication. The refusal of medication could be due to the protest / resistance against forced admission. On the other hand, it could be argued that those who admitted involuntarily are so ill and such high risk to society and that they are less likely to acknowledge their illness and the need for treatment.

The agreement among the two comparison studies (Hoge et al 1990; Kasper et al 1997) that there is a strong relationship between history of prior refusal of medication and the index refusal indicates that in practice, means that such patients could be identified and resources focussed on them to find out why they continually refuses medication and appropriate interventions put in place to prevent further refusal of medication.

Though there is lack of empirical evidence on the involvement, and role, of nursing staff compliance, evidence indicates that interventions through compliance therapy (Kemp et al 1996) leads to change in attitude towards medication and insight thus increases compliance. Kemp et al (1996) found that compliance therapy is a pragmatic method for improving compliance with drug treatment in psychotic inpatients and its gains persist for at least six months, and that overall functioning was also enhanced. Compliance therapy in this study was delivered by a psychiatrist and a psychologist. It is not known whether the outcome
could have been the same in only nurses were involved in the intervention. The challenge is whether this intervention could be effective if delivered by nurses as part of their primary nursing roles. The long term effect of compliance therapy, that is, beyond six months, is neither known nor reduction in relapse rates. In fact, a multicentre randomised controlled trial of the effectiveness of adherence therapy by way of cognitive behavioural therapy provides evidence for the lack of effect of adherence therapy in people with schizophrenia (Gray et al 2006). This is therefore a very important area that needs further clinical trials for effective interventions to not only reduce the conflict due to medication refusal, but also establish long-term adherence to psychotropic medication.

Besides delusions and illness denial, the refusal of medication is related to staff factors and structural issues such as lack of effective ward structure, lack of communication with patients and therapeutic relationship, feelings of imprisonment, and administrative restrictions on patients’ movements. It is plausible that having a treatment environment with the opposite features will reduce the incidence of medication refusal. In addition, in practice settings, patient behaviour such as refusal to comply with request from staff, drug abuse, and previous suicide attempts could be used to predict the risk of medication refusal, and appropriate methods of intervention could be put in place.

18. Future research

It has not been possible to draw firm conclusions on the rates of refusal of medication in acute psychiatry. The various rates of refusal reported have been influenced by definitions of refusal and the exclusion criteria. For instance, the criteria for refusal requiring rejection for more than 24 hours indicates a higher rate of refusal, though not as high as the one that requires at least one week, or the determination refusal through the judicial / administrative review which is longer. Most studies have therefore excluded one-off refusals, those who refuse by palming / cheeking medication or those who have expressed a desire to refuse medication but have not been prescribed medication. Because of the nature of studies, and their narrow definition of refusal, the cost of refusal is not known.

We do not know the extent of medication refusal in inpatient wards. An analysis of urine samples indicate that inpatients take medication irregularly during the course of treatment with a failure rate of 19% (Hare and Willcox 1967). The extent of patient behaviour in evading swallowing pills is unknown. The cost of unused or missed doses (or misused in the context of being taken irregularly to provide the expected efficacy) of drugs must cost millions of pounds to the NHS, not forgetting the cost of patients who accumulate drugs for attempted suicides. One unique study (Littrell et al 1994; Panzano and Rubin 1995) found that short term or non-persistent refusal was associated with poorer outcomes. Other studies (Hoge et al 1990; Rodenhauser et al 1987; Schwartz et al 1988) have only focussed on effects of persistent refusal only. What is the extent of covert and non-persistent medication refusal in inpatient acute wards? What is the rate of irregular medications taking? Why do inpatients take medication irregularly? How do patients conceal medication? What does this behaviour mean?

The typology of the behaviour towards medication into refusers and non-refusers has been exclusive of the third common group, that of non-consistent refusers. Only two studies
(Littrell et al 1994; Panzano and Rubin 1995) that used behaviour-based typology considered the third group. However, only one study (Panzano and Rubin 1995) has analysed the impact of non-consistent refusers’ involvement in hospital-based outcomes. They found that involvement in conflict behaviours such as restraint and seclusion is not just influenced by the non-refusal behaviour per se, but the changes in informal consent behaviour over time. In their study, the status changer group (the non-consistent refuser) was involved in significantly more major and minor incidents, emergency medication interventions and seclusions and restraint events than either the consistent refuser or the consistent non-refuser. More future studies that use longitudinally and behavioural-based classification scheme that includes the third class, status changer group (non-consistent refuser), into the analysis of the impact of refusal on the ward-based outcomes are needed. Most studies have failed to emphasise the heterogeneity of the refuser populations and these, depending on the type of taxonomy used and how data were analysed influence the outcomes of refusal of antipsychotic medication. For instance research based on extreme elements of the refuser population (e.g. refusers who have reached the judicial / administrative review) is likely to lead to exaggeration of the negative consequences of refusal, in comparison to research based on heterogeneous (with broader inclusion criteria) refuser population.

In relation to the above discussion, Appelbaum and Gutheil (1980) using a symptom-based classification, divided refusers into three relatively distinct groups, that is, situational, stereotypic, and symptomatic refusers. Though this is a significant typology with potential implications for practice as it could have implications for predicting the risk of refusing medication, no studies have been carried out to validate its utility.

With the positive role of forced medication adduced by one study in terms of reducing the length of hospitalisation, more robust studies are needed to buttress the findings as it has wider implications for practice. For practice, this would indicate whether the care philosophy of involuntary medication under the treatment-driven model is cost-effective than the voluntary medication under the rights-driven model. It is assumed that rights-driven model would give patients enough time to negotiate for treatment. It is not clear which of the two models would have positive long-term effect on relapse. In addition, since none of the studies have adequately addressed the consequences of involuntary treatment on long-term compliance, observational and longitudinal studies that would investigate how the patients fare in terms of functioning, rehospitalisation rates, and cooperation with follow-up plans. These studies have not addressed the long-term consequences of antipsychotic medication refusal and involuntary treatment. In addition, comparative long-term follow-up studies of patients who are discharged from hospital without treatment to those who are forcefully medicated are needed to identify consequences of refusal.

Despite campaigns for active user involvement not only in research but also in decision making process about treatment, few studies have reported patients’ reasons for refusing medication mostly indirectly from records (Schwatz et al 1988; Marder et al 1984; Hoge et al 1990; Levin et al 1991; Littrell et al 1994; Kasper et al 1997; Baker et al 2009), and few directly but limited in scope (Appelbaum and Gutheil 1980; Hayman, 1981; Hoge et al 1990; Levin et al 1991; Littrell et al 1994). There is a need for comprehensive research in this area. Even though studies have reported issues related side-effects, it is not comprehensively examined as to what exactly these particular fears are among service users. Knowledge of
the reproductive safety of antipsychotics is limited (Ernst and Goldberg, 2002) and this would be an issue especially for both women and men with childbearing potential. I hypothesise that fear of infertility, sexual dysfunction, being unable to have children, impact of medication on the ability to carry out activities of daily living, long-term prognosis of mental illness, knowledge of diagnosis, weight gain, and the nature of stigma associated with long-term taking of antipsychotic medication, influence refusal. There would be, in addition, the socio-cultural and gender related knowledge of reasons why patients refuse medication. The impact of these additional factors on medication refusal requires validation through rigorous studies.

The subjective experience of taking (or refusing) medication encompasses more than an act, as it embodies notions of the self, illness causality, responsibility, meaning of sickness (Nichter and Vuckovic, 2000), exerting of control, bodily effects, meaningful encounter, and unremitting nature (Shoemaker and de Oliveira 2008), loss of control (Murawski and Bentley 2001), narratives of negative and positive effects (Nagochu 2008), and at times loaded with symbolic meaning (Whyte et al 2002). Few researchers have examined the subjective experience of medications specifically in mental illness (Kalijee and Beardsley 1992; North et al 1995; Barter and Comark 1996; Haafkens 1997; Roger et al 1998; Smith et al 2000; Angermeyer et al 2001; Usher 2001; Knudsen et al 2002; Carrick et al 2004; Shoemaker and de Oliveira 2008); meaning of medication (Conrad 1985); the experience of taking medication on daily basis (Shoemaker and de Oliveira 2008); and the socio-cultural meaning of medication (van der Geest and Hardon 2006). Additional studies have focussed on patients’ medication practices or medication-taking behaviours (Carrick et al 2004; Pound et al. 2005), lay beliefs about medicine (Blaxter and Britten 1996), and medication practices or management (Conrad 1985). Only a few sociological studies have considered those who rejected medicines (Britten 1996; Dowell and Hudson 1997; Lumme-Sandt et al 2000) despite the fact that this group would tells us more about non-adherence. Just like studies of adherence, research on medication refusal is still fragmented, of variable methodological quality, lacking integrating model due to neglect of patients’ perspectives on medications (Blaxter and Britten 1996; Vermeire et al 2001), and more specifically the social and other meanings of medication due to lack of qualitative research. Is medication rejection / refusal an attempt by patients to act in accordance with their own conceptual model of illness? What are the patients’ theories, assumptions and beliefs about medication? What is the socio-cultural context of medication in acute psychiatric wards? Few studies have examined users’ views and experiences with medication refusal. There is also need to measure insight and patient’s knowledge of, and understanding about medication, and the extent to which this influences refusal of antipsychotic medication. The project aims to determine insight in a broader sense, and not narrowed to biomedical model, thus measuring it as a complex phenomenon with many components such as global awareness of mental disorder, awareness of effects of medications, and awareness of social consequences of mental disorder (Amador et al 1993) and expected prognosis. In addition, since adherence factors are multifaceted, risk profiles should examine service user, illness, and treatment characteristics in addition to attributes of the healthcare system (World Health Organisation 2003; Dimatteo 2004). Is refusal of medication a rejection of the sickness role as the continued taking of medication implies non-recovery, dissociation from the being, and ‘dependence on drugs’, a ‘drug’ with side-effects that makes one more sick, with undesirable social and personal implications? Is medication taking seen as a control / containment of
thoughts, will, and behaviour? Is fear of disempowerment by medication through sedation, control of movements, and poisoning of the body and mind at the centre of medication refusal?

Further research is also needed to determine the patients’ role, and the nature and dynamics of that role in influencing their peers to either accept or refuse medication. In addition, the in-depth exploration of the patients’ role and their perspectives has not been previously undertaken. Moreover, research into the nature, frequency, and methods of covert refusal of medication needs attention. There is still lack of evidence on the cross-jurisdictional research to determine which system is the most effective in terms of reducing adverse outcomes, and cost in resolving refusal, and either various systems promote refusal of medication. Although all refusals are overridden, the long-term effects of refusal still require further examination by long-term follow-up studies comparing refusers with control groups of accepting patients.

Though some controlled comparison studies of refusers and acceptors indicated that acceptors and refusers did not significantly differ on ethnicity / race, one study has strongly indicated that ethnicity could be used to predict the status group. As such evidence for the influence of ethnicity in refusal of medication is needed, and the direction of that influence through comparison studies. Why are some particular ethnic groups likely to refuse medication?

Mental health registered nurses make the largest proportion of the National Health Service’s mental health services delivery workforce. As such they are pivotal to the delivery of an effective service. Therefore the therapeutic relationship that patients form with staff is pivotal in acceptance, and outcomes, of interventions. The nurse-patient relationship might be at the cornerstone of refusal of medication as it is with lack of compliance with therapy (Bryant et al 2005), and the incidence of various conflicts and containment measures in inpatient wards (Bowers et al 1999; Chiesa et al 2000) including medication refusal. One study also found that ratings of confidence in ward staff were significantly higher in accepters than refusers (Marder et al 1984). However, the nursing staff role in medication refusal has been largely ignored. Expansive research on broad range of professionals, especially nursing staff that interacts with patients on a daily basis, and likely to establish a therapeutic relationship with them, needs further explorations the current literature has only focused on the attitudes and perceptions of psychiatrists. Hoge et al (1990) has inconclusively reported that nursing staff, psychiatrists and family members actively persuaded patients to accept medication. However we are not aware of what the process for each group entailed. The role of professionals on the refusal of antipsychotic medication has not been addressed conclusively. No data currently exists on the ways that professionals (nurse and doctors) negotiate through refusal of medication and how they respond to refusing patients. Though nurses are regarded as professional experts with skills and training to identify problems and offer appropriate solutions (Edwards 1995; Godfrey and Wistow 1997; Barker et al 1999; Simpson 1999; Higgins et al 1999; Forchuk and Reynolds 2001), their role in contributing to, and alleviating, medication refusal / non-compliance, and the nurse-patient alliance has not been explored in detail. Some of the strategies nurses use to overcome medication refusal have been explored (Vuckovich 2009), emphasising the importance of engagement, and formulating a therapeutic alliance. However, studies that
focus on the nurse-patient relationships (recurring patterns) with acute patients and how nurses build or could build and sustain relationship and therapeutic alliances in acute care settings are needed. In addition, nurses’ knowledge of the reasons why and how patients refuse medication is needed.

Studies of perception of psychiatric nurses by mental health patients have produced mixed outcomes. Specifically, service users find the level of contact with their nurses insufficient (Baker et al 2009; Street 2004; Barker et al 1999; Smith 2002; Ricketts 1996; Higgins et al 1999; Chiesa et al 2000; MacGabhann, 2000). In addition, there is perceived inherent lack of enthusiasm among nursing staff, coupled with lack of continuity of care (Watts and Priebe 2002), provision of effective structure on the ward (Baker et al 2009; Bowers 2009) and patient-centred approach (Pullock et al 2004). Factors such as high staff sickness absence (Baker 2002), irregular staffing levels, reliance of agency staff and low staff morale (Street and Svaberg 2003; Bonner et al 2002; Baker et al 2009), negative and confrontational attitude (Bee et al 2008), coercive and dismissive attitude (Gardner et al 1990; Godwin et al 1999), and limited quantity, quality and depth of interaction with nursing staff (Quirk and Lelliott, 2001; Bee et al 2008) contribute to this negative perception of the mental health nursing role. What is the influence of this negative perception of the nurses and nursing role on medication refusal behaviour on acute wards? It is also not known whether compliance interventions would be more cost-effective and have long-term effect on compliance and reduction of relapse.

Studies reviewed have elucidated the problem of psychotropic medication refusal in acute inpatient psychiatry. However, more focussed, cross-jurisdictional, comprehensive, and long-term studies are required to provide more answers, and solutions to provide of medication refusal.
Cited Literature


