Soc Psychiatry Psychiatr Epidemiol (2002) 37: 301-315 10.1007/s00127-002-0549-4

REVIEW

Walid K.H. Fakhoury · Alison Murray · Geoff Shepherd · Stefan Priebe

Research in supported housing

Accepted: 15 February 2002

Abstract *Background* De-institutionalization has led to the provision of various forms of housing with or without support for people with mental illness in the community. In this paper, we review the conceptual issues related to the provision of supported housing schemes, the characteristics of residents, research methods and outcomes, and the factors influencing the quality of care provided. *Methods* A *Medline* and hand search of published literature was complemented by information derived from contacting expert researchers in the field. *Findings* There is considerable diversity of models of supported housing and inconsistent use of terminology to describe them. This makes it difficult to compare schemes, processes, and outcomes. Patients in supported housing are characterized by deficits in self-care and general functioning, whilst behavioral problems such as violence, drug abuse and extreme antisocial habits predict exclusion from supported housing. Most evaluative studies are merely descriptive. In terms of outcomes, it seems that functioning can improve, social integration can be facilitated, and residents are generally more satisfied in supported housing compared with conventional hospital care. Further evidence suggests that most patients prefer regimes with low restrictiveness and more independent living arrangements, although loneliness and isolation have occasionally been reported to be a problem. Little information is available on the factors that mediate outcomes and on skills required by staff. *Conclusion* Research in supported housing for psychiatric patients has so far been neglected. Large scale surveys on structure, process, and outcomes across a variety of housing schemes may be useful in the future to identify some of the key variables influencing outcomes. The use of direct observation methods in conjunction with other more conventional, standardized instruments may also highlight areas for improvement. In conducting research, structure and process, as well as outcomes, need to be considered. Thus, we need to know not just *what* to provide, but *how* to provide it in such a way that it will maximize beneficial outcomes. This represents a considerable research agenda.

Key words supported housing – community care – outcome – staff training – mental illness

Dr. Walid K.H. Fakhoury (✉) · A. Murray · S. Priebe
Unit for Social and Community Psychiatry
Barts and the London School of Medicine
Academic Unit
East Ham Memorial Hospital
Shrewsbury Road
London E7 8QR, UK
Tel.: +44-20/85 86 52 72
Fax: +44-20/85 86 52 73
E-Mail: w.fakhoury@qmw.ac.uk

G. Shepherd
Health Advisory Service 2000
London, UK

Introduction

Over the last 30 years in North America and Western Europe there have been major changes in the forms of residential care provided for people with mental illness. The move towards 'de-institutionalization' has led to increasing numbers of patients with long-term needs being placed in the community and requiring housing with or without support. Historically, mental health services and mental health researchers have distanced themselves from housing, which they have apparently considered a 'social care' issue, defining their role more narrowly around "treatment" (Carling 1993). However, housing is arguably one of the most important factors affecting long-term outcomes (Bigelow 1998). Most countries are now struggling to provide a comprehensive and effective range of housing provisions, along with the necessary support, to enable people with mental health problems to lead fulfilling and satisfying lives in the community (Carling 1992a; 1992b).

Throughout Western European countries, changes in mental health services – particularly the decreasing use of placements in long-stay hospitals – have led to an in-

creasing demand for housing provision for people with mental illness. In the UK, concerns have repeatedly been expressed that the range of available housing is insufficient or of a poor quality (e. g., Audit Commission 1998). It has been argued that this lack of supported housing has enhanced the 'revolving door' for patients who experience repeated admissions to hospital, unstable adjustment in the community, followed by further admissions (Caton and Goldstein 1984; Shepherd 1998). Whatever the validity of this hypothesis, access to suitable housing is a problem for this 'new' generation of long-stay inpatients and failure to make specific provisions for them has meant that they have often begun to accumulate on acute admission wards (Lelliott and Wing 1994; Johnson et al. 1996).

Similar processes have occurred in other European countries. For example, in Germany the number of hospital beds has reduced, particularly since 1990, resulting in increased demand for supported housing. In Berlin the number of places for mentally ill patients in supported housing has risen by threefold over the last decade (Kaiser et al. 2001). A similar situation exists in Italy where, despite considerable reliance on extended family support, demands for sheltered and supported housing following the cessation of admissions to the old psychiatric hospitals in 1978 have steadily increased, especially in central and northern regions.

Research on the effectiveness of housing provisions for the mentally ill must also be placed within an economic context. Across Europe, health systems are striving for maximum cost effectiveness and efficiency. That means knowing what works, but also knowing how much it costs. In the UK, the cost of housing per resident week ranges from £462–362 in a staffed care home to £459–362 in a high-staffed hostel (24-h nursed care) and £212–158 in a low-staffed hostel, depending on the location, i. e., in or outside London (Chisholm et al. 1997). In 1996, the National Health Service Executive estimated that set-up costs per place for '24-hour nursed beds' was in the range between £35,000 and £50,000 per annum (i. e., £700-1000 per week). In view of these costs, it seems reasonable to expect that housing schemes for people with mental illness would have been subject to rigorous evaluation, both in terms of their effectiveness and efficiency. However, there is currently a marked imbalance between the high costs of supported housing on the one hand and the limited number of evaluative studies on the other.

Methods

"For the purposes of this review, studies that were concerned with" supported", "sheltered", "supervised", or "protected" housing (accommodation or living arrangements) where the majority of residents were regarded as having severe and enduring mental illness were included. Throughout the paper, the term "supported housing" will be used in reference to those settings where housing and support – for more than 6 months (thus excluding acute interventions in community placements) – are intrinsically linked. Studies focusing on housing for people suffering primarily from drug or alcohol dependence, specific 'geriatric' (old age) provisions, services for those under 18 years of age with a mental illness, and for those with learning disabilities were excluded. A *Medline* search of published literature with search items such as "supported housing," "sheltered housing," "protected housing" and "supervised housing" provided only 148 papers. No limit was imposed on the year of publication in any of the searches. Adding the terms "mentally ill" or "schizophrenia" to the above searches, and restricting the literature to the aforementioned criteria, yielded fewer results than expected. Altogether, 87 articles (reviews or studies) were identified by the database *Medline*; 21 of which were empirical studies and are presented in Table 1. Given this, it was decided to complement the *Medline* search with the traditional hand search of the literature. Table 1 shows a wide range of European and non-European studies evaluating supported housing for mentally ill patients and is by no means designed to be inclusive of all studies in the field.

This review provides an overview of the literature with the aim of summarizing the existing information and identifying areas of future research to improve the effectiveness and efficiency of various forms of supported housing. More specifically, the paper addresses the following questions:

1. What is the historical background of housing for mentally ill people?
2. What are the concepts of supported housing?
3. What are the characteristics of people receiving supported housing?
4. What is the range of research designs and methods that have been used to evaluate supported housing?
5. What are the outcomes?
6. What factors seem to influence quality of housing care and support?

Results

The Development of Community Care

The process of moving the locus of long-term residential care from hospital to community has proceeded at different rates in different countries (Mangen 1988). It has been driven by a number of factors such as assumed financial savings, the wish to exploit the benefits of new medications, changing social attitudes, etc. (Jones 1972). One of the important initial factors was the gradual conviction that there were features of institutional environments that made them intrinsically unsuitable for delivering high-quality therapeutic long-term care. These criticisms first emerged in the 1950s (Barton 1959; Goffman 1961) and it was not until some time later that empirical studies of 'institutionalism' were undertaken, which highlighted the association between poverty of the physical environment and severity of primary symptoms and secondary handicaps (Wing and Brown 1970). Around this time, the first attempts were also made to develop systematic measures and institutional care practices as a basis for designing and maintaining better quality of residential care in hospital and community settings (King et al. 1971). However, during most of the 1960s and 1970s, the hostility towards 'institutions' (i. e., hospital) was fuelled by a series of well-publicized 'failures' of hospital care in which patients appeared to be the victims of a 'system' in which staff were at best negligent and at worst cruel and exploitative. These incidents have been analyzed by Martin (1984) who drew

Table 1 Investigations evaluating supported housing: design, outcomes, and main findings

Author(s), year, country	Design	Sample size	Housing setting(s)	Diagnosis	Outcomes	Main finding(s)
Sturt et al. (1982) and Wykes et al. (1982), UK	Cross-sectional	43 32 16 67	Hospital wards Supervised hostel Unstated homes No residential care	47 % schizophrenia; 15 % manic depressive/affective psychosis; 14 % neurotic depression; 10 % personality disorders; other 14 %	Hospital-hostel practices profile (HHPP); MRC Social performance schedule (SPS)	No relationship between the HHPP scores of the 27 residential units and the mean number of SPS problems of residents; no specific forms of problem behavior which pointed to a particular type of setting
Wykes (1982)	3-year follow-up	13 16	Hostel ward Hospital	79 % schizophrenia; 21 % personality disorders, paranoia, sub-acute delirium	MRC Social performance schedule; REHAB index; patients' attitudes; time budget; hospital-hostel practices profile	Over the 3 years, there was a decrease in the hostel patients' problems whereas hospital patients hardly changed at all; dissatisfaction with staff and with privacy disappeared over time in clients on the hostel ward
Garety and Morris (1984), UK	Cross-sectional	14 residents 10 staff	Hostel (in hospital grounds)	64 % schizophrenia; 22 % personality disorders; 14 % affective disorder	Management practice questionnaire; staff optimism/pessimism scale; staff perceived level of involvement; direct observation of care/interactions by staff-residents only	High levels of positive interactions with residents; staff attitudes/behavior positively correlated with seniority/length of time on the unit
Allen et al. (1989), UK	Cross-sectional	12 17	Older style hospital ward Hostel	All had a long-term mental disorder	Resident functioning using REHAB index; staff optimism/pessimism scale; staff perceived level of involvement	Hospital unit more individually oriented both in practices and staff attitudes; hospital staff more optimistic about clients' potential accomplishments; no differences between perceived involvement of staff in decision making, or staff-resident interactions
Andrews et al. (1990), Australia	Longitudinal follow-up between 3 and 4 months interval	171 16 118 21	66 in total boarding houses Nursing homes Supported group homes With families	80 % schizophrenia, the rest with severe mental disorders	Satisfaction with living situation; life skills profile; management restrictive practices via homes and hostels practices index	Most long-stay patients discharged in the community were functioning well and expressed preference to remain in the community. There was an increase in mortality but this did not seem to be related to discharge from hospital
Elliot et al. (1990), Canada	6–8 month follow-up	28 17 21	Lodging (private board and care) homes Independent/alone Other	64 % schizophrenia; 11 % manic depression; 8 % schizo-affective disorder; 5 % personality disorder	Life management in the city questionnaire (living situation, social network, psychiatricsupport, income/employment status)	There was similar variability within groups of respondents defined in terms of type of housing, location and living arrangement, as between them; housing satisfaction was a significant correlate of coping indices
Keck (1990), USA	Follow-up at 21 months	20 at baseline and 16 at follow-up	Varied apartment as chosen by user	All had serious mental illness	User choice and choice of care supports; mean number hours of case management; re-hospitalization rates; mortality and destination of leavers; quality of life; priority of skills required to live independently	At follow-up, the majority were still living in their own housing. They had a quite acceptable quality of life, and their use of psychiatric hospital had declined dramatically

Table 1 *Continued*

Author(s), year, country	Design	Sample size	Housing setting(s)	Diagnosis	Outcomes	Main finding(s)
Lehman et al. (1991), USA	Cross-sectional, different city samples, 3 years apart	278 92 17 99	Board and care homes (50+ beds) Large homes (200+ beds) and group homes Supported apartments State hospital	Mixed sample of schizophrenia and personality disorders	Quality of life	Patients in state hospital reported poorer quality of life than some or all of the community-based groups; gradient of quality of life experiences across settings was fairly circumscribed in the life areas of residential quality, health status and safety; no difference in quality of life experiences in areas such as family relation, social relations, number of social activities and non-violent victimization
Segal and Holschuh (1991), USA	10-year follow-up	234	Not defined as to type of sheltered housing; subjects were asked to describe setting as either supportive or transitional high expectation	All had serious mental illness – learning disabilities excluded	Psychosocial kingship inventory; size and type of social network (self-designed scale); length of institutionalization	Supportive rather than transitional, high expectation environments contributed to the development of emotionally and instrumentally supportive social networks; higher levels of psychopathology and a history of institutionalization resulted in the absence of certain support relationships
McCarthy and Nelson (1991, 1993), Canada	5-month follow-up	34	From 7 programs (5 – permanent housing; 2 – transitional); 5 group homes; all had differing supports in time, frequency/type	Mixed sample of people with schizophrenia, bi-polar illness, and depression	Inventory of socially supportive behaviors; resident/management control and staff style; personal empowerment; quality of life; length of stay of hospital admission over 3 time periods, 2 years and 1 year prior to residential community care and 1 year after	Residents' personal empowerment and instrumental role involvement increased over baseline; days of hospitalization reduced; emotional support positively correlated to satisfaction with both housing facility and privacy in housing
Goering et al. (1992a), Canada	Cross-sectional	42	Supported homes	71 % schizophrenia; 10 % affective disorder; 17 % other	Arizona social support interview schedule; inventory of socially supportive behaviors	Need for support overall was greater in residents who had larger networks, more staff and family in their networks, and received more actual help from their networks; need for social participation was greater in those who had actual help from their networks while need for advice was greater in those who had more staff and outside professionals in their networks; satisfaction was related to the composition of the network (more friends) than to the size of or the amount of help received from the network
Goering et al. (1992b), Canada	At discharge and 1-year follow-up	17	Supported homes	76 % schizophrenia; 24 % affective disorder	At discharge: residents'experience and perceptions of their stay in the supported housing program; over the following year, serial assessments of residents' social functioning and changing social circumstances	The large majority was reasonably satisfied with supported housing. The positive benefits focused upon new skills and knowledge. Congregate living and structured programming were the features most criticized and appreciated

Table 1 *Continued*

Author(s), year, country	Design	Sample size	Housing setting(s)	Diagnosis	Outcomes	Main finding(s)
Oliver and Mohamad (1992), UK	Cross-sectional	32 17 12	Boarding-out homes Staffed hostels Group homes	All had long-term mental illness	Quality of life; sheltered care environment scale; global well-being; general health questionnaire	No differences were found across settings in subjective well-being or satisfaction with specific domains of life; staffed hostels had more independent residents but lowest levels of material comfort; hostel residents had more frequent family/social contacts and engaged in a large number of leisure activities; group home residents had more influence on their living situation and enjoyed greater degree of comfort; boarding-out residents enjoyed least independence and least contacts/leisure activities
Segal and Kotler (1993), USA	At discharge and 10-year follow-up	390	Findings not differentiated by type of housing. Staffing reported as variable	76 % schizophrenia; 6 % affective disorders; 23 % comorbidity	External social integration scale and internal social integration scale; physical symptom scale; BPRS; re-hospitalization rates; mortality	There were higher levels of helper-supported social functioning and of physical and mental health, accompanied by significant reductions in social functioning
Shepherd et al. (1996), UK	Cross-sectional	156 staff 230 residents	20 community homes covering four provider types; 5 rehabilitation wards in long-stay mental hospitals	No diagnoses stated	Management arrangements using the home practice index based on the management practices questionnaire and the homes and hostels practice index; Lancashire quality of life profile; physical environment and location; direct observation of staff/resident; global assessment scale; quality of interactions schedule; daily living skills; costs	Most disabled residents were still living in hospital; hospital residents were most dissatisfied with their living situation; few differences existed between community providers regarding quality of care or reported satisfaction
Donnelly et al. (1996), Northern Ireland	At discharge and 1-year follow-up	188 from 6 long-stay hospitals	66 % in high support settings; 25 % in independent living and low staffed hostels	67 % schizophrenia	Community placement questionnaire; social functioning questionnaire; problems questionnaire; personal presentation checklist; resident interview; psychosocial functioning inventory; Depression inventory; social performance schedule	No change in clients' social and domestic skills 1 or 2 years after discharge from hospital; they were more satisfied with their living, and less depressed; their behavior was not adversely affected by life in the community
Seilheimer and Doyle (1996), USA	Cross-sectional	125	16 % in community residential care facilities; 30 % living with relatives; 12 % in supervised accommodation; 48 % in independent living	73 % with schizophrenia	Quality of life; global assessment of functioning; global severity index and brief symptom inventory; personal mastery scale	Less restrictive housing and self-efficacy were associated with higher levels of housing satisfaction; participation in a vocational activity was positively related to housing satisfaction
Oliver et al. (1996), UK	Cross-sectional	140	12 independent staffed homes run by 3 private sector limited companies	People with severe mental illness	Lancashire quality of life profile; sheltered care environment scale	Residents in independent sector hostels had higher quality of life than those in other hostels; they also felt better off in terms of social relationships and finances

Table 1 *Continued*

Author(s), year, country	Design	Sample size	Housing setting(s)	Diagnosis	Outcomes	Main finding(s)
Segal et al. (1997), USA	Cross-sectional	155 133	Housed (non-specific) Homeless	Long-term users of self-help mental health agencies	Social support interview and social network interview	Psychological disability was negatively associated with network characteristics for housed individuals, but not for the homeless
Middleboe (1997), Denmark	Longitudinalstudy with average follow-up period of 1.1 years	47	Group homes (3–5 residents), day staff support only, and amount of support varies in frequency across the sample	79 % schizophrenia; 6 % affective disorder; 15 % organic psychotic or personality disorder	Quality of life; psychopathology; social functioning using basic everyday living schedule; social integration scale; social network scale	Residents showed significant improvement in subjective quality of life, psychopathology, social integration, functioning and hospitalization index; number of reciprocal supportive contacts in the social network increased; improvement in quality of life was predicted by reduction in symptoms and improvement in social integration
Nelson et al. (1997a), Canada	Baseline and 1-year follow-up	25 52 25	Compared of Board and Care (for profit) homes (BCH) with 24-hour staffing Supported apartments (SA) (staffing variable from weekly to on call) Group homes (GH) staffing variable between 8 and 24 hours	Non-matched groups, severe long-term mental illness, all were on psychotropic medication	Modified version of sheltered care environment scale; socially supportive/ unsupportive behavior; personal mastery scale; independent functioning; quality of life; meaningful activity; number of instrumental roles	Residents of SA and GH had more control in decision making in the residences than those in BCG; those in GH and BCH had more staff support, more emotional and problem-solving support and less emotional abuse than those in SA; all increased their involvement in instrumental roles overtime, and residents of SA and GH reported increased community involvement and independent functioning
Tempier et al. (1997), Canada	A 7-year follow-up study	60	Community settings (not quantified nor differentiated) which included supported apartments, foster homes, halfway house and a hostel	All schizophrenia	Satisfaction for life domains; global assessment scale; social integration using the activity pattern inventory; service use	No change in subjective quality of life at a group level between baseline and follow-up; functional status decreased while social integration improved and more services were used
Ryrie et al. (1998), UK	Cross-sectional	12	3 settings, one each of high, medium, and low support run by housing association and staffed by NHS staff	People with enduring mental illness	Staff perception of importance of user involvement in specific areas	Mean social functioning scores varied across settings; levels of resident involvement were positively associated with social functioning
Middleboe et al. (1998), Denmark	Cross-sectional	28 10 7	Own apartment with outreach support Staff supported apartments with communal social areas Bedded-apartments with shared facilities	74 % schizophrenia; 9 % affective disorder; 17 % organic psychotic or personality disorder	Satisfaction with life; global assessment scale; quality of life; Camberwell assessment of needs; support to residents – staff rated	Satisfaction rates were moderate to high; quality of life improved; low agreement between residents and staff on the presence of needs

Table 1 *Continued*

Author(s), year, country	Design	Sample size	Housing setting(s)	Diagnosis	Outcomes	Main finding(s)
Borge et al. (1999), Norway	Longitudinal study with 6-year follow-up	107 at baseline, 75 at follow-up	41 % in general nursing homes; 30 % in psychiatric nursing homes; 29 % in independent accommodation	69 % schizophrenia	Quality of life; level of functioning; global assessment of functioning; happiness; social networks via staff report	Patients outside of institutions had the most socially active and had the most satisfying contact with their families, and were the most satisfied; loneliness, satisfaction with neighborhood, and leisure time activities were main predictors of subjective well-being
Grunebaum et al. (2001), USA	Cross-sectional	17 16 28 13	Permanent residency (not all mentally ill) Permanent residency (all mentally ill) Transitional residence for formerly mentally ill Permanent residency for formerly homeless mentally ill women	70 % schizophrenia; 23 % schizoaffective disorder; 7 % psychotic disorder NOS	Global assessment of functioning; medication adherence; degree of medication supervision; opinion about medication	Medication supervision in supported housing was found to be inversely related to the duration of medication non-adherence; no association between non-adherence and substance abuse
Jarbrink et al. (2001), UK	Cross-sectional	25 132 76	General housing Supported housing Group/residential homes	People with enduring mental illness, homelessness and substance abuse	Camberwell assessment of needs, psychosis screening questionnaire; client service receipt inventory; modified version of the living units environment schedule; cost	Residents in more independent arrangements had many and/or particularly severe needs – they received higher levels of informal care than those in supported housing; residents in the most costly arrangements were assessed as having greater number of needs than those in other accommodation categories
Horan et al. (2001), Australia	Cross-sectional	30 30	Boarding houses for mentally ill Hostels for mentally ill	All had schizophrenia	Lehman quality of life interview	Residents preferred boarding house accommodation. Overall residents of both accommodation reported satisfaction with quality of life; higher mean scores were reported by those in boarding houses on the general life satisfaction and satisfaction with living situation domains

out a number of common themes: isolation, lack of leadership, and failures in management – these themes are just as relevant to providing good quality residential care in the community, as they were in preventing 'failures' in hospital.

The early years of developing community alternatives to long-term residential care were, therefore, marked by a great deal of activity, but very little research. The White Paper *'Better Services for the Mentally Ill'* (DHSS 1975) envisaged a system in which community alternatives would develop as a result of a *partnership* between the NHS and local authority and other housing providers, but these partnerships were slow to form. Although the funds were there to move people out of hospital, *'the administrative and financial structures necessary to integrate local services into a co-ordinated program of care'* (Thornicroft and Bebbington 1989) were generally absent. Without these systems, the dangers of poorly regulated care and individuals 'falling through the net' became almost inevitable. Professionals and public alike became increasingly concerned about stories of how 'ex-mental patients' had been 'dumped' in the community with no follow-up and support, so that in a leading article in the BMJ, Groves (1990) concluded that *'community care is not working'*. In this context, the British TAPS study (started in 1985) began. There had been isolated examples of studies looking at various kinds of residential options (Ryan 1979; Wykes 1982; Pritlove 1983; Goldberg et al. 1985). However, as Garety (1988) contemporarily noted, *'given the pressing need for systematic evaluations of current and new residential provision, remarkably little empirical work is being undertaken on its effectiveness, or to determine whether the principles presently enunciated with so much conviction are associated with positive (or negative) outcomes'*.

Concepts of supported housing

In 1987, the American 'National Institute of Mental Health' (NIMH) attempted to define 'supported housing' as an "approach" that focuses on clients goals and preferences, uses an individualized and flexible rehabilitation process, and has a strong emphasis on normal housing, work, and social network. The approach is based on clients' choice of their own living situations, their right to live in normal stable housing, and to have the services and supports required to maximize their opportunities for success over time (NIMH 1987). This definition, while useful conceptually, is so broad that it is not possible to use it as a framework for classifying different kinds of facilities. Lelliott et al. (1996), by contrast, suggested a multi-dimensional system for classifying sheltered and supported housing facilities based on the availability of different kinds of staff cover, number of beds and staff to resident ratios. This classification reflects a traditional view of residential care based on a 'sheltered housing' model where the extent of support available from staff *in situ* is seen as one of the predominant defining characteristics. However, more recent developments in the housing field have tended to emphasize other models for linking housing and support (Carling 1993) where staff are used more flexibly to provide high (or low) levels of support according to fluctuating levels of individual need.

The main problem in defining supported housing is the diversity of existing housing models (Goldmeier et al., 1977; Carling 1978; Fairweather 1980; Budson 1981; Carling 1981; Carling 1984; Segal and Liese 1991) which makes comparative evaluations of effectiveness very difficult. A central dimension underlying different forms of housing concerns expected lengths of stay and of transitional, or 'move on', accommodation *versus* a 'home for life' (Bigelow 1998). A survey of housing schemes for people with severe mental illness in the USA showed considerable variation (Randolph et al., 1991) with some settings emphasizing maintenance (Carling 1987) while others used a more transitional ('rehabilitation') approach (Spaulding et al., 1987). While it has been suggested that the ideal would be a mix of both, as Bigelow (1998) has noted there is a need to resolve the question of emphasis.

Characteristics of residents

Several patient characteristics are likely to predict whether patients live independently or in supported housing. In a study comparing clients living in supported housing with those in semi-supervision and those living independently, clients in supported housing were more likely to be older, less educated, and unemployed than clients living independently or in semi-supervised settings (Friedrich et al. 1999). Those living independently have been reported by other studies to be of younger age (Arns and Linney 1995), of female gender (Cook 1994; Andia et al. 1995), and to have had shorter duration of hospital care (Wykes and Dunn 1992).

In addition to these characteristics, a diagnosis of schizophrenia is common among many residents in supported housing schemes (Middleboe et al. 1998; Friedrich et al. 1999). It has been argued that many people suffering from schizophrenia require structure in the environment to prevent decompensation (Lamb 1995). Some have suggested that the prevalence of schizophrenia patients in supported housing is an indication of the recognition by formal or informal caregivers of the needs of a number of patients with schizophrenia for the kind of structure and support which is generally not found in more independent living settings (Friedrich et al. 1999).

There has also been some interest in the possibility that neuro-cognitive abilities may discriminate between patients in supported housing and independent living. For example, skills on complex reaction-time tasks (Wykes and Dunn 1992) and performance on visual motor and verbal processing tasks (Brekke et al. 1997) have

been found to be linked to the level of residential supervision received. Not surprisingly, associations have also been found between patients' daily living skills (Livingston et al. 1992; Sood et al. 1996) and general functional abilities (Cook 1994; Arns and Linney 1995) and housing status. Those with the lowest skills are more likely to be placed in supported housing. The degree of independence for patients with schizophrenia has also been reported to be positively linked with the frequency of family contact and levels of participation in social and recreational activities and social relationships (Dickerson et al. 1999).

Another body of research points to the characteristics of patients who may be *excluded* from traditional housing developments. In some services, 'new' long-stay inpatients accumulate on acute admission wards (Lelliot and Wing 1994) because some characteristics – mainly behavioral difficulties such as unpredictable aggression, violence, extreme antisocial behavior, and fire risk – make them difficult to look after in traditional housing in the community. They also commonly have 'co-morbidity' problems, particularly with drug and alcohol abuse (Lelliott et al. 1994). Similarly, there is a 'hard core' of former 'old' long-stay patients who have been found to be difficult to place in the community (Trieman and Leff 1996). Further evidence suggests that community residential facilities actively 'cream off' the less disabled clients (Jones 1993; Holloway and Faulkner 1994; Shepherd et al. 1996). This often means that the most disabled patients are left in the worst conditions, being looked after by the least skilled and often demoralized staff. Developing specialist residential facilities for this group (and the 'new' long-stay) is, therefore, a considerable challenge (Shepherd 1998).

Research issues – design and limitations

Most of the studies conducted in this area have been uncontrolled follow-ups, cross-sectional surveys, or non-randomized controlled trials (Table 1). There has also been some use of direct observation methods (Shepherd et al. 1996). There are obvious conceptual, practical, and ethical problems in conducting randomized controlled trials and, as a result, they are very rare. Cross-sectional investigations, on the other hand, seem to be the most common. Causality, however, cannot be ascertained in cross-sectional designs (Wykes et al. 1982; Garety and Morris 1984; Allen et al. 1989; Goering et al. 1992a; Goering et al. 1992b; Oliver and Mohamad 1992; Seilheimer and Doyle 1996); hence, the calls by some researchers (Rowlands et al. 1998; Borge et al. 1999) for longitudinal evaluations. However, the length of the follow-up period needs to be taken into account, as follow-up periods ranging from a few months (Elliot et al. 1990; McCarthy and Nelson 1991; 1993) to a year (Goering et al. 1992b; Donnelly et al. 1996; Middleboe 1997; Nelson et al. 1997a) are not long enough to detect meaningful sustainable changes.

Design aside, studies in the field seem to be faced with limitations casting doubts on the generalizability of their findings. Having a small sample size, as is the case in many studies on supported housing (Garety and Morris 1984; Keck 1990; McCarthy and Nelson 1993; Snyder et al. 1994; Shepherd et al. 1996; Rowlands et al. 1998; Dickerson et al. 1999), puts into question the representativeness of the sample. Geographic homogeneity is another limitation. Studies often focus on settings selected from a particular geographic area that often share the same profile of residents and housing characteristics (Massey and Lu 1993; Segal and Kotler 1993; Ryrie et al. 1998; Friedrich et al. 1999). When clients are sampled from social services agencies, as is the case in some American studies (Nelson and Earls 1986; Seilheimer and Doyal 1996; Earls and Nelson 1998), it is difficult to ascertain whether the sample represents the population of long-term psychiatric clients found in the community or merely the higher-functioning individuals who are in frequent contact with these agencies. In some studies, the sample consists of mentally ill residents with no specific diagnosis reported (Allen et al. 1989; Segal and Holschuch 1991; Oliver and Mohamad 1992; Shepherd et al. 1996; Ryrie et al. 1998) or of residents with different diagnoses (Sturt et al. 1982; Lehman et al. 1991; McCarthy and Nelson 1991; 1993; Oliver et al. 1996; Middleboe et al. 1998; Jarbrink et al. 2001). In others, there is no proper description of the housing settings under evaluation, thus disallowing comparisons to be made to findings from other settings (Segal and Holschuh 1991; Goering et al. 1992; Segal et al. 1997; Tempier et al. 1997). Despite these methodological limitations, research in the field has provided needed information to improve the structure and indeed the quality of supported housing programs.

Outcomes

The indication from the non-randomized controlled trials is that supported housing schemes can have beneficial effects (Goering et al. 1992; McCarthy and Nelson 1993; Nelson et al. 1997) with moderate to high satisfaction levels being reported by most clients (Elliot et al. 1990; Middleboe et al. 1998; Kaiser et al. 2001). Formal studies with matched controls are rare, but one of the largest studies comparing various placements in the community with ongoing hospital care is by the Team for Psychiatric Services (TAPS) in the UK (O'Driscoll and Leff 1993; Leff et al. 1996; Leff 1997; Leff and Trieman 2000). In the TAPS, over 700 formerly long-term hospitalized patients were followed and comparisons with controls at the 5-year follow-up showed stability in psychiatric symptoms with negative symptoms reduced considerably. Physical health remained stable, with significant improvements in social behavior and domestic and life skills; social networks increased (albeit marginally) and patients grew to enjoy the freedom of their environment. By year 5 only a handful wanted to return to

hospital. Other studies have similar findings (Borge 1999; Donnelly 1996; Segal and Kotler 1993; Andrews 1990; Hoffmann et al. 2000).

Several studies underline the importance attached to independent living (Tanzman 1993; Owen et al. 1996; Seilheimer and Doyal 1996) with less restrictive housing and high feelings of 'self-efficacy' being associated with housing satisfaction (Seilheimer and Doyal 1996). However, problems of isolation and loneliness are reported by some residents (Goering et al. 1992). Friedrich et al. (1999), for example, found that those who lived in a setting with 24-h on-site support were less likely to complain about social isolation than those who lived in supported housing with on-site visits or in an apartment/home with no on-site staff.

Cross-sectional comparisons have also highlighted differences in perceptions between patients and caregivers regarding supported housing. Minsky et al. (1995) reported that patients preferred more independent living arrangements, while staff favored more structured environments. Similarly, family members were reported to be more likely to be in favor of supported housing than patients (Holley et al. 1998; Friedrich et al. 1999).

Factors affecting outcomes

Although outcome assessment is clearly essential to evaluate the success of a supported housing scheme, importance should also be placed on the understanding of the multiple factors that may exert an influence on the quality of care and on outcomes. According to Donabedian (1966) the literature on quality of residential care may be grouped into 'structural' and 'process' elements. The structure of a service describes 'the setting in which the intervention takes place and the instrumentalities of which it is the product,' while the process is 'those activities triggered by any patient who enters the setting.' So far, there has been no comprehensive study on the effects of these elements. However, a number have addressed individual elements that may be placed within this framework. As shown in Table 1, a familiar range of standardized measures of symptoms and functioning has been used. In addition, there has been considerable interest in self-reported satisfaction, quality of life measures and some interesting special measures of organizational process, e. g., the 'Environmental Index' (Leff 1997).

Physical and social environment

Baker and Douglas (1990) found that, even when the effects of support services and unmet needs were controlled for, living in, or moving to, poor quality or inappropriate housing was related to increases in maladaptive behavior, reductions in perceived quality of life, and decreases in global functioning. In terms of individual issues in the physical environment, lack of privacy is one of the main complaints (McCarthy and Nelson 1993; Nelson et al. 1995). It has been shown to be related to negative effect, especially in 'older style' group homes (Nelson et al. 1988). Differences between residents and case managers with regard to assessments of the physical environment are also common. Privacy, independence, personal choice, convenient location, and proximity to mental health services have all been reported to be significantly *more* important to residents in community housing than to their case managers (Massey and Wu 1993).

As to the influence of living with others on psychological health, the evidence is more mixed. Borge et al. (1999) found single living no more lonely for people than group situations. This confirms earlier work by Goldstein and Caton (1983) who found no clinical or social differences between those living alone and those in a group environment. However, as indicated earlier, loneliness and isolation have been reported by others (Friedrich et al. 1999). These differences may reflect sample differences. Lewis and Trieman (1995) also found higher re-admission rates from single person, independent accommodation. On the other hand, living in close proximity with others who have a serious mental illness may be perceived as a source of stress (Goering et al. 1992). Nelson et al. (1997) found residents of single supported apartments stated their relationships with others deteriorated over time.

Staff training, case-mix, and staffing levels

There has been little systematic research to identify the appropriate criteria for the recruitment, selection, and management of housing support staff. Nor has much attention been given to specifying what tasks should be performed and what skills and, therefore, training are needed for effective working. In fact, training is often neglected, particularly among voluntary and independent sector providers. For example, a survey of 48 homes in London revealed that a fifth did not provide any training at all, not even for dealing with aggression and violence (Senn et al. 1997). Since studies in the USA have shown that effective staff training can lead to better quality of services, lower staff turnover, greater participation in social activities, and less hospital admissions of patients (Petersen and Borland 1995; Raskin et al. 1998), it is clear that much more work needs to be done with regard to the development of effective staff training packages.

Numbers of staff are likely to be influential in terms of the engagement of residents in practical and social activities, whatever their social and psychological handicaps. There is currently little information regarding the optimal 'fit' between case-mix, staffing levels, and outcomes. There are some indications in the UK that there may be an imbalance whereby too many of the more 'able' people are housed in settings with high levels of support settings (Audit Commission 1998). Shepherd et al. (1996) also found a poor match between levels of disability and staffing levels, with the biggest differences

between hospital and community facilities. However, the relationship between absolute numbers of staff and quality of care may not be simple. There is indeed evidence showing that a slight *under*staffing may encourage greater levels of participation (Barker and Gump 1964; Nelson et al. 1998). It may, therefore, not be absolute numbers of staff that are important, but rather how they are organized and managed.

Staff organization

There are a number of studies on the impact of organization and management practices in housing care. Allen et al. (1989) reported that community living, as opposed to conventional hospital care, does not guarantee – on its own – a supportive social environment. In this study, location seemed less important than the staff and the way they organize and manage the setting. A dimension of organization and management practices that has received particular attention is the 'restrictiveness' of the environment. The less restrictive the housing regime, the more the opportunities for normal 'rhythms' of life occur and the less institutionalized is the "feel" of the accommodation (McCarthy and Nelson 1991; Shepherd 1995; Leff 1997). This aspect of organizational 'culture' has a clear effect on subjective satisfaction and quality of life (Shepherd et al. 1996). Culture, therefore, appears to be dependent on the skills and attitudes of the staff and their ability to manage the environment so that privacy is respected and unnecessary rules and restrictions are minimized.

Staff-resident interactions and 'Expressed Emotion [EE]'

At the heart of these 'cultural' issues are the day-to-day interactions between staff and residents. The concept of 'Expressed Emotion' [EE], a measure of interaction developed in the context of interactions between people with schizophrenia and their key relatives (Anderson et al. 1984; Leff and Vaughn 1985), has been shown to be a predictor of symptomatic relapse. An analysis of aggregate data from 25 studies linking EE and schizophrenia showed a strong association between EE and relapse, with high contact with a high EE relative related to increased risk of relapse, the opposite true for contacts with low EE relative(s) (Bebbington and Kuipers 1995). This association has been reported across different cultures (Bertrando et al. 1992; Martins et al. 1992; Vaughan et al. 1992; Tanaka et al. 1995; Mottaghipour et al. 2001).

The EE concept has been applied to analyzing the interactions between staff and residents in supported housing, and a high EE staff-resident relationship was found (Moore et al. 1992a; Moore et al. 1992b, Humbeeck et al. 2001). Some reported that houses with staff who had significantly higher levels of EE (mainly criticism) had a higher resident discharge rate than those with staff with low EE (Ball et al. 1992). Others argued that the more critical the emotional climate, the poorer the quality of residents' lives, suggesting that the quality of interpersonal environment, regardless of a familial or quasi-familial context, is the important aspect of the relationship between EE and course of illness (Sorensen-Snyder et al. 1994). As with the family studies, it seems likely that the focus of the high EE interactions will be difficulties for staff in coping with the 'negative' symptoms (lack of motivation, social withdrawal, etc) which are common among the most disabled patients. The findings of these studies open up the possibility of applying similar kinds of training programs to those that have been used successfully with families to modify high levels of critical, emotional interactions, with care staff and residents. As far as the actual quality of day-to-day staff/resident interactions, to our knowledge, only one major study has attempted to examine this *via* direct observation. Shepherd et al. (1996) observed interactions in 25 different residential care environments for people with mental illness. This included a variety of private and voluntary providers as well as a sample of long-stay hospital wards. They found the number and quality of the interactions varied considerably, but there was no association with any particular provider type. Fewer staff/resident interactions occurred overall in the long-term hospital wards and a higher proportion was graded 'negative' or 'neutral.' Whether specific supervision and training, combined with feeding back these results to staff, could be used to improve levels of positive interactions remains to be investigated.

Conclusions

There is considerable diversity of models in relation to supported housing and inconsistent use of terminology to describe them. This makes it difficult to compare outcomes or processes in different schemes because of uncertainties regarding the definition of the 'independent variable.' This is a common problem facing researchers and planners in mental health services (Burns and Priebe 1996). Instead of further attempts to define supported housing and related terms, future research might try to identify specific features that discriminate between different settings and contribute to outcomes.

Regarding who is served by supported housing, there is evidence of factors that are likely to lead to inclusion in, and exclusion from, supported housing. Predictably, the inclusion factors center around deficits with regard to self-care and general functional problems that may or may not be related to underlying cognitive deficits associated with major disorders like schizophrenia. These findings highlight the relevance of attempts to find retraining or compensation strategies that can help such individuals make improvements in their functioning. At present, the evidence for the effectiveness of such 'cognitive remediation' strategies is weak (Priebe and McCabe 2000); their application in the context of residential care is, therefore, some way ahead. Nevertheless, the implication is that residents do need highly individualized care plans that reflect their unique pattern of

strengths and weaknesses if they are to function at their optimal level. Similarly, a consideration of exclusion factors raises issues of how best to provide effective treatment and manage strategies for very difficult behavioral problems such as violence, drug abuse, and extreme antisocial habits. Once again, a careful 'single case' approach seems an appropriate way forward. We also need to know more about the effectiveness of specialist residential facilities designed for the care of such individuals based on the 'ward-in-a-house' model (Shepherd 1998; MacPherson and Jerrom 1999).

In terms of research designs and methodology, most of the studies are descriptive and there are few controlled evaluations and almost no random controlled trials. Again, there are understandable reasons for this, but in the absence of RCTs it may be helpful to undertake large-scale surveys on structure, process, and outcomes across a variety of housing schemes in order to try to identify some of the key variables influencing outcome. These large-scale studies can also investigate how variation of costs in supported housing is associated with outcomes and establish the cost-effectiveness of different housing schemes. More in-depth qualitative studies might also give further insights into key processes. Methodologically, the use of direct observation methods, in conjunction with measuring the physical and social environment (input) and the quantity and quality of staff-resident interactions (process), may highlight areas for improvement. Valid standardized instruments to measure these already exist. For example, staff-resident interactions and management style, two main elements of the process of care, could be measured using instruments such as the Quality of Interactions Schedule (QUIS) (Dean et al. 1993) and the Hospital-Hostel Practices Profile (HHPP) (Wykes 1982). On the other hand, physical environment, an important input element, could be measured using the Sheltered Care Environment Scale (Moos and Lemke 1979).

As far as individual outcome measures are concerned, the UK Government Paper setting out requirements for monitoring the delivery of the Mental Health National Service Framework and the NHS Plan Mental Health emphasized the importance of quality of life and client satisfaction as performance indicators. It is, therefore, expected that the focus will be on these in future evaluation of supported housing programs. This should not, of course, lessen the importance of other outcomes, whether they are service- (cost, hospital use) or non-service-related (social networks, symptom stabilization).

Evidence from research on outcomes of supported housing is mixed given the samples are mixed and the nature of the housing is mixed. Yet it seems that functioning can improve, social integration can be facilitated, and residents are generally more satisfied. There is evidence that most patients prefer more independent living arrangements and there are certainly stresses sometimes involved in too-close group-living. On the other hand, loneliness and lack of support can be a problem. Again, the differences may be attributable to individual differences and these must be taken into account when planning a comprehensive system of housing options.

While the outcome evidence generally points towards the positive impact of supported housing on residents' mental and social health, there is little information on the factors that affect positive outcomes. Studies have addressed the effects of structural elements such as the physical environment, patient case-mix, and staffing levels; however, there is hardly any evidence about the effects of differences in clinical practice. The question is not just what structure is most suitable for the delivery of quality supported housing care, but also what practices and interventions undertaken in these places are likely to lead to the most positive patient outcomes (Priebe 2000). These should, therefore, be a priority for future research.

Finally, as far as staff training and staff-resident interactions are concerned, little is known either in terms of the most important skills required by staff, or the ef-

Table 2 Problems raised and the way forward

Problem (issue)	Solution
There are conceptual problems in defining supported housing	There is a need to identify features that discriminate between different settings and contribute to outcomes
Inclusion and exclusion factors for providing supported housing seem to exist	Provision of supported housing needs to be considered on a "single case" basis
Research has been mostly cross-sectional with methodological limitations	There is a need for large scale surveys that focus on structure, process, and outcome across a variety of housing schemes to identify key variables affecting outcomes
Interest has been on the effects of the physical environment, patient case-mix, and staffing levels on outcomes	There is a need to assess the effects of different clinical practices on outcomes
There has been little systematic research to identify the appropriate criteria for the recruitment, selection, and management of staff	There is a need to specify what tasks should be performed and what skills/ training are needed for effective working
Staff-resident interaction needs to be strengthened	This could be done using "Expressed Emotions" models, and measured using direct observation methods
Outcomes indicate positive impact of supported housing on residents' mental and social health	There is a need to investigate factors that affect positive outcomes

fectiveness of different approaches in improving skill levels. One specific area where there are promising interventions already available is in relation to reducing levels of 'expressed emotion', particularly criticism, among carers. This awaits application in the field of residential care. Such interventions might be evaluated by examining their direct effect on the quality of staff-resident interaction, as well as their effects on relapse prevention.

There is much to learn in relation to supported housing programs. Housing is such a ubiquitous and obvious need that it seems paradoxical that it has been so neglected by researchers in the past. One may hope that this deficiency will be remedied in the future. As indicated, we need to know not just *'what'* to provide, but *'how'* to provide it in such a way that it will maximize beneficial outcomes. This certainly represents a considerable research agenda.

Acknowledgements The authors would like to thank Dr Rosemarie McCabe from the Unit for Social and Community Psychiatry, St. Bartholomew's and the Royal London School of Medicine, Ms Patricia Fernandez from the Rehabilitation Team, Newham Community Health Services NHS Trust, and Dr Andrea Melella for their comments on drafts of this paper. Many thanks to the Springboard Foundation for funding this review and a study on the evaluation of supported housing in London, which is currently being conducted at the Unit for Social and Community Psychiatry.

References

1. Allen CL, Gillespie CR, Hall JN (1989) A comparison of practices, attitudes and interviews in established units for people with a psychiatric disability. Psychol Med 19: 459–467
2. Anderson CM, Hogarty G, Bayer T, Needleman R (1984) Expressed emotion and social networks of parents of schizophrenia patients. Br J Psychiatry 144: 247–255
3. Andia AM, Zisook S, Heaton RK, et al. (1995) Gender differences in schizophrenia. J Nerv Ment Dis 183: 522–528
4. Andrews G, Teeson M, Stewart G, Hoult J (1990) Follow-up of community placement of the chronic mentally ill in New South Wales. Hosp Community Psychiatry 4 (12): 184–188
5. Arns PG, Linney JA (1995) Relating functional skills of severely mentally ill clients to subjective and social benefits. Psychiatr Serv 46: 260–265
6. Audit Commission (1998) Home Alone. Audit Commission, London
7. Baker F, Douglas C (1990) Housing environments and community adjustment for severely mentally ill persons. Community Ment Health J 26 (6): 497–505
8. Ball R, Moore E, Kuipers L (1992) Expressed emotions in community care staff: a comparison of patient outcome in a nine month follow-up of two hostels. Soc. Psychiatry Psychiatr Epidemiol 27: 35–39
9. Barker RG, Gump PV (1964) Big school, small school. Stanford University Press, Stanford CA
10. Barton R (1959) Institutional Neurosis. John Wright, Bristol
11. Baxter E, Hopper K (1984) Troubled in the streets: the mentally disabled homeless poor. In: Talbott A (ed) Chronic mental patient: five-years later. Grunne and Stratton, New York
12. Bebbington P, Kuipers L (1994) The predictive utility of expressed emotion in schizophrenia: an aggregate analysis. Psychol Med 25 (1): 707–718
13. Bertrando P, Beltz J, Bressi C, Clerici M, Farma T, Invernizzi G, Gazzullo C (1992) Expressed emotion and schizophrenia in Italy. A study of an urban population. Br J Psychiatry 161: 223–229
14. Bigelow D (1998) Supportive homes for life versus treatment way-stations: an introduction to TAPS Project 41. Community Ment Health J 34 (4): 403–405
15. Borge L, Martinsen E, Ruud T, Watne O, Friis S (1999) Quality of life, loneliness and social contact among long-term psychiatric patients. Psychiatr Serv 50: 81–84
16. Brekke JS, Raine A, Ansel M, et al. (1997) Neuropsychological and psychophysiological correlates of psychosocial functioning in schizophrenia. Schizophr Bull 23: 19–28
17. Budson RD (ed) (1981) Issues in community residential care. New directions for mental health services, No. 11, National Institute of Mental Health, Rockville Md
18. Burns T, Priebe S (1996) Mental health care systems and their characteristics: a proposal. Acta Psychiatr Scand 94: 381–385
19. Carling PJ (1978) Residential services in psychosocial context: the Horizon House Model. New directions of mental health services (cooperative apartments). National Institute of Mental Health, Rockville Md
20. Carling PJ (1981) Nursing homes and chronic mental patients: a second opinion. Schizophr Bull 7: 574–579
21. Carling PJ (1984) Developing family foster care programs in mental health: a resource guide. National Institute of Mental Health, Rockville Md
22. Carling PJ (1992a) Homes or group-homes? Future approaches to housing, support, and integration of people with psychiatric disabilities. Adult Resident Care J 6 (2): 87–96
23. Carling PJ (1992b) Housing, community support and homelessness: emerging policies in mental health systems. New Engl J of Publ Policy, 281–295
24. Carling PJ (1993) Housing and supports for persons with mental illness: emerging approaches to research and practice. Hosp Community Psychiatry 44 (5): 439–449
25. Carling PJ, Randolph F, Blanch A, Ridgeway P (1987) Rehabilitation research review: housing and community integration for people with psychiatric disabilities. The Center for Community Change through Housing and Support, Berlington VT
26. Caton C, Goldstein J (1984) Housing change of chronic schizophrenia patients: a consequence of the revolving door. Soc Sci Med 19: 759–764
27. Chisholm D, Knapp M, Astin J, Beecham J, Audini B, Lelliott P (1997) The mental health residential care study: the costs of provision. J Mental Hlth 6 (1): 85–99
28. Cook JA (1994) Independent community living among women with severe mental illness: a comparison with outcomes among men. J Ment Health Adm 21: 362–398
29. Dean R, Proudfoot R, Lindesay J (1993) The quality of interactions schedule (QUIS): development, reliability and use in the evaluation of two domus units. Int J Geriatr Psych 10: 819–826
30. DHSS (1975) Better services for the mentally ill. Cmnd 6233. HMSO, London
31. Dickerson FB, Boronow JJ, Ringel N, et al. (1997) Lack of insight among outpatients with schizophrenia. Psychiatr Serv 48: 195–199
32. Dickerson FB, Ringel N, Parente F (1999) Predictors of residential independence among patients with schizophrenia. Psychiatr Serv 50 (4): 515–519
33. Donabedian A (1966) Evaluating the quality of medical care. Milbank Q 44: 166–206
34. Donnelly M, McGilloway S, Mays N, et al. (1996) Leaving hospital: one and two-year outcomes of long-stay psychiatric patients discharged to the community. J Ment Health 5 (3): 245–255
35. Elliot SJ, Taylor SM, Kearns RA (1990) Housing satisfaction, preference, and need among the chronically mentally disabled in Hamilton, Ontario. Soc Sci Med 30 (1): 95–102
36. Fairweather G (1980) The Fairweather Lodge: a twenty-five year retrospective. New directions for mental health services, No. 7, National Institute of Mental Health, Rockville Md
37. Friedrich R, Hollingsworth B, Hradeck E, Friedrich H, Culp K (1999) Family and client perspectives on alternative residential settings for persons with severe mental illness. Psychiatr Serv 50 (4): 509–514
38. Garety P, Morris I (1984) A new unit for long-stay psychiatric patients: organisation, attitude and quality of care. Psychol Med 14: 183–192

39. Garety P (1988) Housing. In: Lavender A, Holloway F (eds) Community care in practice. Wileys, Chichester
40. Garety P, Morris I (1984) A new unit for long-stay psychiatric patients:organisation, attitudes and quality of care. Psychol Med 14: 183–192
41. Goering P, Durbin J, Foster R, Boyles S, Bobiak T, Lancee B (1992a) Social networks – residents in supportive housing. Community Ment Health J 28: 199–214
42. Goering P, Sylph J, Boyles S, Babiak T (1992b) Supported housing: a consumer evaluation study. Int J Soc Psych 38 (2): 107–119
43. Goffman E (1961) Asylums: essays on the social situation of mental patients and other inmates. Anchor Books, Doubleday, New York
44. Goldberg DB, Bridges K, Cooper W, Hyde C, Sterling C, Wyatt R (1985) Douglas House: a new type of hostel ward for chronic psychiatric patients. Br J Psychiatry 147: 383–388
45. Goldmeier J, Shore MF, Manninno FV (1977) Cooperative apartments: new programs in community mental health. Health Soc Work 2: 119–140
46. Goldstein JM, Caton CL (1983) The effects of the community environment on chronic psychiatric patients. Psychol Med 13: 193–199
47. Groves T (1990) The future of community care. BMJ 300: 923–924
48. Grunebaum M, Weiden P, Olfson M (2001) Medication supervision and adherence of persons with psychotic disorders in residential treatment settings: a pilot study. J Clin Psychiatry 62 (5): 394–399
49. Hoffmann K, Iserman M, Kaiser W, Priebe S (2000) Quality of life in the course of de-institutionalisation. Part IV of the Berlin deinstitutionalisation study. Psychiatr Prax 27: 183–188
50. Holley H, Hodges P, Jeffers B (1998) Moving psychiatric patients from hospital to community: views of patients, providers and families. Psychiatr Serv 49 (4): 513–517
51. Holloway F, Faulkner A (1994) Psychiatric hospital re-provision and the long-stay patient: clinical outcomes and the user perspective. J Ment Health 26: 507–515
52. Horan M, Muller J, Winocur S, Barling N (2001) Quality of life in boarding houses and hostels: a residents' perspective. Comm Mental Hlth J 37 (4): 323–334
53. Hoult J, Reynolds I, Charboneau-Powis M, Weekes P, Briggs J (1983) Psychiatric hospital versus community treatment: the results of a randomized trial. Aust N Z J Psychiatry 17: 160–167
54. Jarbrink K, Hallam A, Knapp M (2001) Costs and outcomes management in supported housing. J Mental Hlth 10 (1): 99–108
55. Johnson S, Thornicroft G, Strathdee G (1996) Population-based assessment of needs for services. In: Thornicroft G, Strathdee G (eds) Commissioning mental health services. HMSO, London
56. Jones D (1993) The TAPS Project 11. The selection of patients for reprovision. In: Leff J (ed) Evaluating community placement of long-stay psychiatric patients. Br J Psychiatry Suppl 162 (9): 36–39
57. Jones K (1972) A history of mental health services. Routledge and Kegan Paul, London
58. Kaiser W, Hoffmann K, Isermann M, Priebe S (2001) Long-stay patients in supported housing after de-institutionalisation. Part V of the Berlin deinstitutionalisation study. Psychiat Prax 28 (5): 235–243
59. Keck J (1990) Responding to consumer housing preferences: the Toledo experience. Psychosoc Rehab J 13 (4): 51–58
60. King R, Raynes N, Tizard J (1971) Patterns of residential care. Routledge and Kegan Paul, London
61. Kozol J (1988) Rachel and her children: homeless families in America. Crown, New York
62. Lamb HR (1995) Structure: the unspoken word in community treatment. Psychiatr Serv 46: 647
63. Leff J, Trieman N (2000) Long-stay patients discharged from psychiatric hospitals; social and clinical outcomes after five years in the community. The TAPS Project 46. Br J Psychiatry 176: 217–213
64. Leff J, Trieman N, Gooch C (1996) Team for the assessment of psychiatric services (TAPS) project 33: prospective follow-up study of long-stay patients discharged from two psychiatric hospitals. Am J Psychiatr 153 (10): 1318–1324
65. Leff J, Vaughn C (1985) Expressed emotion in families: its significance for mental illness. Guilford Press, New York
66. Leff J (1997) Care in the community: illusion or reality? Wiley, London
67. Lehman A, Slaughter J, Myers P (1991) Quality of life in alternative residential settings. Psychiatr Q 62 (1): 35–49
68. Lelliott P, Wing J (1994) National audit of new long-stay psychiatric patients: impact on services. Br J Psychiatry 165: 160–169
69. Lelliott P, Wing J, Clifford P (1994) A national audit of new long-stay psychiatric patients. I: methods and description of the cohort. Br J Psychiatry 165: 160–169
70. Lewis A, Trieman N (1995) The TAPS Project 29: residential care provision in North London: a representative sample of ten facilities for mentally ill people. Int J Soc Psychiatry 41 (4): 257–267
71. Livingston J, Srebnik D, King D, Gordon L (1992) Approaches to providing housing and flexible supports for people with psychiatric disabilities. Psychosoc Rehab J 16 (1): 27–43
72. Lovell A, Barrow S, Hammer M (1984) Social support and social network interview. New York State Psychiatric Institute, Epidemiology of Mental Disorders Research Department, New York
73. MacPherson R, Jerrom B (1999) Review of 24-h nursed care. Adv Psychiatr Treat 5: 146–153
74. Mangen S (1988) Implementing community care: an international perspective. In: Lavender A, Holloway F (eds) Community care in practice. Wileys, Chichester
75. Martin JP (1984) Hospitals in trouble. Blackwells, Oxford
76. Martins C, De Lemos A, Bebbington P (1992) A Portuguese/Brazilian study of expressed emotion. Soc Psychiatry Psychiatr Epidemiol 27 (1): 22–27
77. Massey O, Wu L (1993) Housing for people with mental illness: perspectives of case managers and consumers. Psychosoc Rehab J 17 (2): 81–92
78. McCarthy J, Nelson G (1991) An evaluation of supportive housing for current and former psychiatric patients. Hosp Community Psychiatry 42 (12): 1254–1257
79. McCarthy J, Nelson G (1993) An evaluation of supportive housing: qualitative and quantitative perspectives. Can J Community Ment Health 12 (1): 157–175
80. Middleboe T (1997) Prospective study of clinical and social outcome of stay in small group homes for people with mental illness. Br J Psychiatry 171: 251–255
81. Middleboe T, Mackeprang T, Thalsgaard A, Christiansen PB (1998) A housing support programme for the mentally ill: need profile and satisfaction among users. Acta Psychiatr Scand 98: 321–327
82. Minsky S, Riesser GG, Duffy M (1995) The eye of the beholder: housing preferences of inpatients and treatment teams. Psychiatr Serv 46: 173–176
83. Moore E, Ball R, Kuipers L (1992a) Expressed emotion in staff working with the long-term adult mentally ill. Br J Psychiatry 161: 802–808
84. Moore E, Kuipers L, Ball R (1992b) Staff-patient relationships in the care of the long-term adult mentally ill. A content analysis of expressed emotions interviews. Soc Psychiatry Psychiatr Epidemiol 27 (1): 28–34
85. Mosher L, Menn A, Matthews S (1975) Soteria: evaluation of a home-based treatment for schizophrenia. Am J Orthopsych 45: 455–467
86. Mottaghipour Y, Pourmand D, Maleki H, Davidian L (2001) Expressed emotion and the course of schizophrenia in Iran. Soc Psychiatry Psychiatr Epidemiol 36 (4): 195–199
87. Mowbray C, Greenfield A, Freddolino P (1992) An analysis of treatment services provided in group homes for adults labeled mentally ill. J Nerv Ment Dis 180: 551–559
88. Muijen M, Marks I, Connolly J, Audini B (1992) Home-based care and standard hospital care for patients with severe mental illness: a randomized controlled trial. BMJ 304 (6829): 749–754
89. National Association of State Mental Health Program Directors (NASMHPD) (1987) Position statement on housing and support for people with long-term mental illness. NASMHPD, Alexandria VA

90. Nelson G, Hall GB, Walsh-Bowers R (1997) A comparative evaluation of supportive apartments, group homes, and board-and-care homes for psychiatric consumers/survivors. J Community Psychol 25 (2): 167–188
91. Nelson G, Walsh-Bowers R, Hall GB (1998) Housing for psychiatric survivors: values, policy and research. Adm Policy Ment health 25 (4): 455–462
92. Nelson G, Wiltshire C, Hall GB, Peirson L, Walsh-Bowers R (1995) Psychiatric consumers/survivors' quality of life: quantitative and qualitative perspectives. J Community Psychol 23: 216–233
93. O'Driscoll C, Leff J (1993) The TAPS Project 8. Design of the research study on the long-stay patients. Br J Psychiatry Suppl 19: 18–24
94. Oliver J (1991) The social care directive: development of a quality of life profile for use in community services for the mentally ill. Soc Work Soc Sci Review 3: 5–45
95. Oliver J, Huxley P, Bridges B, Mohamad H (1996) Quality of life and mental health services. Routledge, London
96. Oliver J, Mohamad H (1992) The quality of life of the chronically mentally ill: a comparison of public, private, and voluntary residential provisions. Br J Soc Work 22: 391–404
97. Owen C, Rutherford V, Jones M, et al. (1996) Housing accommodation preferences of people with psychiatric disabilities. Psychiatr Serv 47: 628–632
98. Parker G, Hadzi-Pavlovic D (1990) Expressed emotion as a predictor of schizophrenia relapse: an analysis of aggregated data. Psychol Med 20 (4): 961–965
99. Pattison E, DeFransisco D, Wood P, et al. (1975) A psychosocial kingship model for family therapy. Am J Psychiatry 132: 1246–1251
100. Peterson P, Borland A (1995) Use of state hospital staff to provide training for staff of community residential facilities. Psychiatr Serv 46 (5): 506–508
101. Priebe S (2000) Ensuring and improving quality in community mental health care. Int Rev Pych 12: 226–232
102. Priebe S, McCabe R (2000) Hospital and rehabilitation services. Curr Opin Psych 13: 215–219
103. Pritlove J (1983) Accommodation without resident staff for ex-psychiatric patients. Br J Soc Work 13: 75–92
104. Randolph FL, Ridgway P, Carling PJ (1991) Residential programs for persons with severe mental illness: a nationwide survey of state affiliated agencies. Hosp Community Psychiatry 42: 1111–1115
105. Raskin A, Mghir R, Peszke M, York D (1998) A psychoeducational program for caregivers of the chronic mentally ill residing in community residencies. Community Ment Health J 34 (4): 393–402
106. Ryan P (1979) Residential care for the mentally disabled. In: Wing JK, Olfsen R (eds) Community care for the mentally disabled. Oxford University Press, Oxford
107. Ryrie I, Breanach S, Grundy A (1998) User involvement and collaboration in supported housing. Br J Comm Nursing 10 (3): 507–511
108. Segal S, Holschuh J (1991) Effects of sheltered care environments and resident characteristics on the development of social networks. Hosp Community Psychiatry 42 (11): 1125–1131
109. Segal S, Kotler P (1993) Sheltered care residence: ten-year personal outcomes. Am J Orthospychiat 63 (1): 80–91
110. Segal S, Liese L (1991) A ten-year perspective on three models of sheltered care. Hosp Community Psychiatry 42: 1120–1124
111. Segal S, Silverman C, Temkin T (1997) Social networks and pyschological disability among housed and homeless users of self-help agencies. Soc Work Health Care 25 (3): 49–61
112. Seilheimer T, Doyal G (1996) Self-efficacy and consumer satisfaction with housing. Community Ment Health J 32 (6): 549–559
113. Senn V, Kendal R, Trieman N (1997) The TAPS Project 38: level of training and its availability to carers with group homes in a London district. Soc Psychiatry Psychiatr Epidemiol 32: 317–322
114. Shepherd G (1995) The ward-in-a-house: residential care for the severely disabled. J Ment Health 31: 53–69
115. Shepherd G (1998) Social functioning and challenging behavior. In: Mueser K, Tarrier N (eds) Social functioning and schizophrenia. Allyn Bacon, New York
116. Shepherd G, Beadsmoore A, Moore C, et al. (1997) Relation between bed use, social deprivation, and overall bed availability in acute adult psychiatric units, and alternative residential options: a cross-sectional survey, one day census data, and staff interviews. BMJ 314: 262–266
117. Shepherd G, Muijen M, Dean R, Cooney M (1996) Residential care in hospital and in the community – quality of care and quality of life. Br J Psychiatry 168: 448–456
118. Shepherd G, Singh K (1992) Practical importance of the expressed emotion concept for rehabilitation. Psychiatr Prax 3: 72–75
119. Sood S, Baker M, Bledin K (1996) Social and living skills of new long-stay hospital patients and new long-term community patients. Psychiatr Serv 47: 619–622
120. Sorensen-Snyder K, Wallace C, Moe K, Liberman R (1994) Expressed emotion by residential care operators and residents' symptoms and quality of life. Hosp Community Psychiatry 45: 1141–1143
121. Spaulding W, Hairg RE, Schwab LO (1987) Preferred clinical skills for transitional living specialists. Psychosoc Rehab J 15: 109–113
122. Stein LI, Test MA (1985) The training in community living model: a decade of experience. New directions of mental health services (No. 26). National Institute of Mental Health, Rockville Md
123. Stroul B (1988) Crisis residential services in a community support system. National Institute of Mental Health, Rockville Md
124. Sturt E, Wykes T, Creer (1992) Demographic, social and clinical characteristics of the sample. In: Wing JK (ed) A survey of long-term users of the community psychiatric services in Camberwell. Psychol Med. Suppl 2: 5–14
125. Tanaka S, Mino Y, Inoue S (1995) Expressed emotion and the course of schizophrenia in Japan. Br J Psychiatry 167 (6): 794–798
126. Tanzman B (1993) An overview of surveys of mental health consumers' preferences for housing and support services. Hosp Community Psychiatry 44: 450–455
127. Tempier R, Mercier C, Leouffre P, Caron J (1997) Quality of life and social integration of severely mentally ill patients: a longitudinal study. J Psychiatr Neurosci 22 (4): 249–255
128. Test MA, Stein LI (1980) Alternative to mental hospital treatment. Arch Gen Psychiatry 37: 409–412
129. Thornicroft G, Bebbington P (1989) Deinstitutionalisation – from hospital closure to service development. Br J Psychiatry 155: 739–753
130. Trieman N, Leff J (1996) The TAPS Project 36: the most difficult to place long-stay psychiatric inpatients. Outcomes one year after relocation. Team for the assessment of Psychiatric Services. Br J Psychiatry 169 (3): 289–292
131. Van Humbeeck G, Van Audenhove C, Pieters G, De Hert M, Storms G, Vertommen H, Peuskens J, Heyrman J (2001) Expressed emotion in staff-patient relationships: the professionals' and residents' perspective. Soc Psychiatry Psychiatr Epidemiol 36: 486–492
132. Wing JK, Brown GW (1970) Institutionalism and schizophrenia: a comparative study of three mental hospitals 1960–1968. Cambridge University Press, Press
133. Wykes T, Dunn G (1992) Cognitive deficits and the prediction of rehabilitation success in a chronic psychiatric group. Psychol Med 22: 389–398
134. Wykes T, Sturt E, Creer C (1992) Practices of day and residential units in relation to the social behaviour of attenders. In: Wing JK (ed) A survey of long-term users of the community psychiatric services in Camberwell. Psychol Med Supplement 2: 15–27
135. Wykes T (1982) A hostel-ward for the 'new' long-stay patients. In: Wing JK (ed) Long term community care. Psychol Med Supplement 2: 41–55