A Prevention Model for Occupational Therapy

Judy Grossman

Key Words: mental health • occupational therapy services • preventive health services • preventive psychiatry

The role of occupational therapy in prevention has received much discussion but relatively little empirical testing and model building. Because of the evidence linking stress and illness, the life stress process has become a popular area of investigation. More importantly, a role strain model can provide a theoretical guide to occupational therapy practice due to the central importance of adaptive behavior and social competence. To illustrate, the maternal stress study is presented as an example of prevention research that examines the relationship between maternal stress and child psychopathology. Risk factors are identified as the first step in reliable case finding and the design of preventive interventions. Such model building can help occupational therapists develop prevention services for vulnerable populations.

P revention has become an expanding area of involvement for health professionals and a fiscally driven response to rising health care costs. It is instructive to outline some of the initiatives and support for prevention activities that have occurred in occupational therapy theory and practice over the past 20 years. There have been convincing arguments for the role of occupational therapy in health promotion and disease prevention and the need to move practice into the community (American Occupational Therapy Association [AOTA], 1979; Finn, 1973; Gilfoyle, 1988; Grossman, 1977; Jaffe, 1986; Johnson, 1985; Rider & White, 1986; West, 1968; Wiemer, 1972). Further support comes from the increasing number of empirical studies and prevention program descriptions in the literature (George, Braun, & Walker, 1982; Gill, Veigl, Shuster, & Notelovitz, 1984; Gonski & Miyake, 1985; Hamilton-Dodd, Kawamoto, Clarke, Burke, & Fang, 1989; Kirchman, Reichenbach, & Gambalvo, 1982; Mungai, 1985; Szekais, 1985; White, 1986).

Despite these examples, models of practice for prevention research and service provision are lacking. Such models can provide a theoretical basis for occupational therapy prevention services as well as meaningful collaboration with other human service providers.

Literature Review

Primary Prevention

A growing interest in health and fitness exists (U.S. Department of Health, Education and Welfare, 1979). Current efforts to promote health and prevent illness are being championed by health care consumers as well as government and business communities. Some indicators of change include the increasingly sophisticated employee-assistance programs to reduce risk and promote healthy life-styles, the number of health education programs offered through schools and community centers, and the growing self-help and family support movements.

Unfortunately, mental health issues remain a secondary focus due to the dominance of the medical model, the shrinking health care dollar, the lack of a national prevention policy, and arguments that scarce resources should be targeted to persons with serious mental illness (Marlowe & Weinberg, 1985). Despite these barriers, advocates for social policies and preventive interventions hope to prevent maladaptive outcomes for children and adolescents and minimize problems in daily living for vulnerable populations (Schorr & Schorr, 1988).

The prevention of psychopathology is beginning to attract more attention as the interdependence of physical and mental health is supported (Bloom, 1986; Commission on the Prevention of Mental-
Emotional Disabilities, 1986). The empirical evidence for this includes Berkman and Syme's (1979) Alameda County study citing a relationship between mortality and social support and the extensive research literature establishing a relationship between social stress and physical and mental health (Elliot & Eisdorfer, 1982). This growing recognition of a generic component to illness has precipitated research on stress, support, and coping paradigms.

Again, the prevention of mental disorders has not kept pace with more disease-specific prevention research. Prevention services have historically grown out of the public health model, which focused on infectious and communicable diseases with known etiologies. In contrast to a clear cause-and-effect relationship, mental disorders are more commonly multidetermined and require multiple types of intervention. Bloom (1981) developed a general disease prevention paradigm that has shifted the emphasis from predisposing factors to precipitating factors. Etiological factors in the new paradigm include stressful life events as well as biological, psychological, and social factors that differentially predispose persons to mental disorders. Prevention strategies include the reduction of social and environmental stressors and the increase in individual mastery, social support, and coping skills.

Other preventionists continue to modify the public health model. Albee (1984) believed that the incidence of dysfunction is determined by a balance of forces between individual vulnerability, social and environmental risk factors, and personal and social resources. A noted spokesman for the field, Albee (1980) referred to primary prevention as the fourth revolution in mental health; he recommended specific interventions, social action, and political advocacy to reduce stress and strengthen the host.

Much literature exists on the relationship between risk factors, vulnerability, and disorder (Anthony, 1977; Masten & Garmezy, 1985; Rolf & Hasazi, 1977; Rutter, 1979; Sameroff, Seifer, Barocas, Zax, & Greenspan, 1987; Werner & Smith, 1982). Epidemiological studies describe high-risk populations and specific risk factors associated with dysfunctional outcomes. The modifiable risk factors then become a potential point of intervention. This linkage is an important component of prevention research.

The analysis of risk factors has also triggered the study of resilience, invulnerable children, and protective factors for psychopathology. There has been a noticeable shift from a defect to a competency model and from risk variables to successful adaptation and the negotiation of risk situations (Garmezy, 1987; Rutter, 1987). As defined by the National Institute of Mental Health's Center for Prevention Research (1985), preventive intervention strategies avoid or interrupt the development of mental disorders or behavioral dysfunctions and improve individual adaptive capacities. Such activities should take place in primary institutions that are part of everyday life, such as health service facilities, schools, homes, and the workplace.

Social Stress Research

Primary prevention and social stress research converge due to the impressive evidence linking stress and illness (Dohrenwend & Dohrenwend, 1984; Elliot & Eisdorfer, 1982). Since the earliest study by Holmes and Rahe (1967), research has progressed from the prediction of illness based on stressful life events to the explanation of illness based on multiple sources of stress, including life events, chronic strain, and daily hassles. The critical feature of the emerging paradigms is the inclusion of social and psychological resources to explain individual reactions to stress. Some examples of moderating variables are social support, personal mastery, self-esteem, psychological well-being, and coping skills. More recently, the goal of social stress research has been to generate theories about the stress process and to examine the relationships among variables (Bloom, 1985; Dohrenwend & Dohrenwend, 1984; Lazarus, 1984).

Pearlin (1983) refined the stress paradigm by adding the critical construct of role strain. He hypothesized that roles are a source of stress, because "it is around daily and enduring roles such as breadwinning and work or marriage and parenthood that much of our lives are structured" (p. 5). In essence, Pearlin is not concerned with the occurrence of events or their magnitude, but with the quality of events and their effect on role functioning.

In conclusion, there are expanding needs and diminishing resources. According to the Commission on the Prevention of Mental-Emotional Disabilities (1986), the prevalence of psychopathology, coupled with limited manpower and financial resources, makes prevention imperative. There is a substantial and rapidly growing knowledge base, but much work needs to be done in the application of that knowledge. Model building can provide the foundation for more experimental and policy-based research to prevent psychopathology and promote physical and mental health.

Maternal Stress Study

Model building provides empirical support for the development of models of practice. For the purpose of this paper, the maternal stress study is described briefly in order to highlight the relationship between theory and practice and the utility of a role strain model for occupational therapists. I designed the
study to examine the relationships between maternal stress, personal and social resources, and child psychopathology. The purpose was to identify specific risk factors as the initial step in the design of family-based preventive interventions.

The importance of the prevention of child psychopathology cannot be overstated, because it is estimated that 25% to 30% of school-age children demonstrate maladjustment (Bower, 1978; Campbell, 1983; Cowen et al., 1975; Joint Commission on the Mental Health of Children, 1970) and 21% to 27% of preschoolers exhibit behavior problems (Earls, 1980; Richman, Stevenson, & Graham, 1982; Rickel, Smith, & Sharp, 1979). The social and financial costs of this new childhood morbidity and related family stress warrant immediate action.

The Maternal Stress Research Model

An empirical relationship exists between maternal stress and socioemotional adjustment in children (Atlas & Rickel, 1988; Earls, 1983; Richman et al., 1982), but the process of influence is unclear. Most research has tested the relationship between social stress and maternal depression or maternal depression and child outcome. Although reference is made to the importance of stress on the child, this has rarely been tested (Belle, 1982; Belsky, 1984, Forehand, Walley, & Furey, 1984).

Researchers have hypothesized that maternal depression and life stress can lead to disturbances in the parent–child relationship, which may consequently lead to behavioral and developmental problems in children. Two relevant studies provide some evidence for both direct and indirect effects of chronic stress on maternal behavior (Conger, McCarty, Yang, Lahey, & Kropp, 1984) and the child's adjustment (Longfellow & Belle, 1984). In both models, maternal well-being is a mediating link between stress and the child's outcome.

With the Maternal Stress Research Model (see Figure 1), I attempted to answer the following questions:

1. Does maternal stress have a direct effect on the child, or is it transmitted to the child through maternal depression?
2. How well do personal and social resources, specifically social support, role satisfaction, and mastery, moderate the stress process?

Maternal stress was conceptualized as a system of variables that produce strain in the mother's life and that interfere with her ability to function successfully in the parental role. The sources of stress emanate from the child, the mother, and the social context. On the basis of a pilot study and literature review, the composite maternal stress measure included four indexes of stress: the child's temperament, housing, health, and money. Child psychopathology was defined as behaviors that are a source of difficulty for the family or teacher and significant for the child's future development (Earls, 1983). It included social, emotional, and learning problems.

Method

The sample consisted of 70 Hispanic mothers, each with a 3-year-old child attending Head Start classes in New York City. Thirty-seven girls and 33 boys were selected from five programs. Data collection proceeded in three stages. First, the mothers were administered the maternal stress interview schedule and two self-report measures—the Center for Epidemiological Studies Depression Scale (CES-D) (Radloff, 1977) and the Pearlin Mastery Scale (Pearlin & Schooler, 1978). Second, the children were taken from the classroom and administered the Miller Assessment for Preschoolers (Miller, 1982) for evaluation of developmental or school-related problems. Third, the head teacher was instructed to complete the Preschool Behavior Questionnaire (Behar, 1977) to rate each child’s socioemotional behavior in the classroom. All instruments were administered in the subject's preferred language by me or by the professionally trained bilingual research assistant.

Results

The results of the epidemiological study indicated that 24% of the children scored at risk for socioemotional problems on the Preschool Behavior Questionnaire, and 36% of the children scored at risk for developmental and preacademic problems on the Miller Assessment for Preschoolers. The mean score for the Miller Assessment for Preschoolers was the 34th percentile (SD = 22.5). Cross tabulations indicated that 16% of the children were at risk for both learning and socioemotional problems, and 55% of the children...
performed age appropriately compared with the standardization populations.

The mothers were relatively impoverished and undereducated (see Table 1). Twenty-one percent reported having no confidant, despite small nuclear families and large extended-family networks. On the basis of a risk cutoff score of 16 or above on the CES-D Scale, 41% of the mothers demonstrated high depressive symptomatology.

Hierarchical multiple regression analyses were conducted to determine the strength of the predictor variables. The best and most parsimonious model, accounting for 19% (p < .001) of the variance in the Preschool Behavior Questionnaire, was the additive effects of child temperament and, to a marginal degree, role satisfaction. Although the data did not support the hypothesis that stress was moderated by maternal well-being, these two variables were positively correlated (r = .30, p < .007), and the pathways of influence remain unclear.

Role satisfaction was only a marginally significant predictor of child behavior, but it was a powerful predictor of maternal depression. Both role satisfaction (r = .48) and mastery (r = .43) were highly correlated with scores on the CES-D Scale, and the multiple regression analysis demonstrated that 48% of the variance in maternal depression was explained by these variables in combination with the child's temperament, housing, and health.

Because of the strong evidence supporting a main effect of the child's temperament on the Preschool Behavior Questionnaire, a multiple regression analysis was conducted to identify some of the factors associated with stress in the parent-child relationship. The results showed that 37% of the variance in the child's temperament was explained by child vulnerability, maternal depression, and number of children.

Table 1
Sociodemographic and Personal Characteristics of the Sample Mothers (N = 70)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language</td>
<td></td>
</tr>
<tr>
<td>English</td>
<td>67.1</td>
</tr>
<tr>
<td>Spanish</td>
<td>32.9</td>
</tr>
<tr>
<td>Birthplace</td>
<td></td>
</tr>
<tr>
<td>United States</td>
<td>37.1</td>
</tr>
<tr>
<td>Other</td>
<td>62.9</td>
</tr>
<tr>
<td>Years in United States</td>
<td></td>
</tr>
<tr>
<td>&lt;5</td>
<td>5.7</td>
</tr>
<tr>
<td>5-10</td>
<td>12.9</td>
</tr>
<tr>
<td>&gt;10</td>
<td>44.3</td>
</tr>
<tr>
<td>Always</td>
<td>57.1</td>
</tr>
<tr>
<td>Education</td>
<td></td>
</tr>
<tr>
<td>Less than eighth grade</td>
<td>12.9</td>
</tr>
<tr>
<td>Some high school</td>
<td>31.4</td>
</tr>
<tr>
<td>High school diploma/GED</td>
<td>22.9</td>
</tr>
<tr>
<td>Post-high school training</td>
<td>7.1</td>
</tr>
<tr>
<td>Some college</td>
<td>23.4</td>
</tr>
<tr>
<td>College graduate</td>
<td>4.3</td>
</tr>
<tr>
<td>Work status</td>
<td></td>
</tr>
<tr>
<td>Full-time</td>
<td>7.1</td>
</tr>
<tr>
<td>Part-time</td>
<td>10.0</td>
</tr>
<tr>
<td>No work</td>
<td>82.9</td>
</tr>
<tr>
<td>Current position</td>
<td></td>
</tr>
<tr>
<td>Full-time homemaker</td>
<td>61.4</td>
</tr>
<tr>
<td>Full-time student</td>
<td>4.3</td>
</tr>
<tr>
<td>Part-time student</td>
<td>8.6</td>
</tr>
<tr>
<td>Part-time volunteer</td>
<td>4.3</td>
</tr>
<tr>
<td>Looking for work</td>
<td>4.3</td>
</tr>
<tr>
<td>Worker</td>
<td>17.1</td>
</tr>
<tr>
<td>Public assistance</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>37.1</td>
</tr>
<tr>
<td>Yes</td>
<td>62.9</td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>42.9</td>
</tr>
<tr>
<td>With boyfriend</td>
<td>14.3</td>
</tr>
<tr>
<td>Separated</td>
<td>18.6</td>
</tr>
<tr>
<td>Divorced</td>
<td>5.7</td>
</tr>
<tr>
<td>Widowed</td>
<td>4.3</td>
</tr>
<tr>
<td>Single, never married</td>
<td>14.3</td>
</tr>
<tr>
<td>Confidant</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>21.4</td>
</tr>
<tr>
<td>Yes</td>
<td>78.6</td>
</tr>
<tr>
<td>Life satisfaction</td>
<td></td>
</tr>
<tr>
<td>Very</td>
<td>35.7</td>
</tr>
<tr>
<td>Somewhat</td>
<td>44.3</td>
</tr>
<tr>
<td>Only a little</td>
<td>20.0</td>
</tr>
</tbody>
</table>

Note. GED = general equivalency diploma.

Case A: High-Risk Family

D.R. is an 18-year-old single mother who dropped out of high school to have her child. D.R. and her daughter live with the grandmother, who is also a single parent with no partner in the household. D.R. has never worked and has no concrete plans for the future, although she reports that she is studying part-time for her high school equivalency diploma. She states that she is satisfied with her social network, which consists of three relatives and three neighbors. On the self-report instruments, she scored high on depressive symptomatology and low on personal mastery. Her child scored at risk on the Miller Assessment for Preschoolers and the Preschool Behavior Questionnaire. Contact with the school is infrequent.
The teacher commented that D.R. displayed the same disruptive and aggressive behavior as her daughter when she was a child in the same Head Start classroom.

Case B: At-Risk Family

M.T. is a single mother who lives with her only child in a single-room welfare hotel. The child was born with neurofibromatosis, which necessitates frequent visits to the medical clinic. Socioenvironmental stressors include the need for emergency housing and an addicted boyfriend. Although M.T. did not complete high school, she has long-range plans to become a social worker, and she still maintains contact with counselors from her adolescent group home. Her social network consists of two relatives, one friend, and the Head Start family worker; M.T. would prefer more contact with other people. Self-report instruments indicate no depressive symptomatology and moderate feelings of personal mastery. Her child scored at risk for developmental problems on the Miller Assessment for Preschoolers and no risk on the Preschool Behavior Questionnaire.

Case C: Low-Risk Family

M.O. is a 30-year-old mother with an intact family. There is a 5-year-old sibling in the home, and the mother reports she is active in the children’s school. M.O. is satisfied with her husband, who provides a steady source of income through his work in a factory. M.O. is currently satisfied with her homemaker role, but she is preparing for the future by taking English and typing courses. She has completed her high school equivalency diploma. Her social network consists of two relatives, one friend, and the Head Start family worker; M.O. would prefer more contact with other people. Self-report instruments indicate no depressive symptomatology and a high sense of personal mastery. The child was not at risk on either of the criterion measures.

Discussion

The results of the maternal stress study contribute to the epidemiological and social stress literature on Hispanic families. They also have implications for service provision and the design of prevention programs. The findings support the cumulative effect of risk factors as the best predictor of outcome (Masten & Garmezy, 1985; Rutter, 1987; Sameroff et al., 1987; Werner & Smith, 1982). It is also instructive to differentiate biological and environmental risk, even though the two are interrelated (Chamberlin, 1987).

The findings also support the evidence that a child's temperament plays a role in the development of behavioral problems (Earls & Jung, 1987; Rutter, 1987; Thomas & Chess, 1977). Possibly, difficult temperament creates a vulnerability to stress, which causes familial and environmental variables to become increasingly significant over time (Earls, 1986). According to Thomas and Chess (1977), goodness of fit may be the critical construct, because temperament may influence the parent–child relationship and thereby increase the child’s risk (Barron & Earls, 1984; Rutter, 1983; Wertlieb, Weigel, Springer, & Feldstein, 1987). The goodness-of-fit construct has practical and clinical implications for the parent–child relationship and school functioning; it is a risk factor that is amenable to intervention through parent and teacher guidance (Chess & Thomas, 1986).

The strong association between child temperament and maternal mood suggests a need to focus on the interactional process. Bates (1980) captured this relationship when he defined difficult temperament as a combination of the child's qualities, the mother's qualities, and their relationship. Strategies to decrease tension in the parent–child system can be incorporated into child and family prevention programs through parent education, support groups, or therapy (Chess & Thomas, 1986).

Personal resources are powerful predictors of outcome, and they may be the focus of intervention. One of the most intriguing findings revolves around the central importance of role satisfaction in the prediction of maternal depression and, secondarily, child socioemotional behavior. Perhaps the mother’s dissatisfaction with her current roles and use of time is transmitted to the child through maternal depression. This supports the process of the influence model proposed by Lerner & Galambos (1985), in which the interactional process is paramount. Role satisfaction leads to enhanced self-esteem, positive parenting, and child adjustment.

A central focus of prevention programs should be the quality of the mother’s life. This includes the number and variety of roles she experiences and her ability to have a life plan and control over her future. The high prevalence of depressive symptomatology suggests that programs should focus on the mother's needs and personal development as well as her child's needs and the parent–child relationship.

Prevention programs should provide education and training for low-income mothers as well as opportunities to develop self-esteem, a sense of mastery, satisfying social relationships, and adaptive coping skills. Programs limited to parental training will not provide fundamental and lasting results because they do not meet the developmental needs of both mothers and children.

The present study has additional implications for systems intervention. Vulnerability items such as prematurity, birth complications, and developmental delay were associated with maternal stress. Biological risk is responsive to maternal and child preventive.
health services, and a commitment must be made to provide these services for vulnerable populations. Similarly, quality preschool programs are associated with child competence (Berrueta-Clement, Schweinhart, Barnett, Epstein, & Weikart, 1984; Schorr & Schorr, 1988), and funds must be targeted for comprehensive and intensive family-based services through early childhood programs.

The family must be empowered. This is critical for Hispanic mothers who suffer stereotyped sex roles and conflicts between rising aspirations and a restricted range and choice of roles. The prevention of child psychopathology necessitates a family focus and a commitment to strengthen and support family life. In summary, the examination of early childhood risk factors provides information for more refined experimental and policy-based research. It also serves as a guide to clinical practice.

**Professional Implications**

Prevention models in occupational therapy are needed (Mosey, 1986; Reed, 1984). Currently, this is an undeveloped area of practice, yet one that is expanding rapidly due to changes in the health care marketplace. The occupational therapy literature contains some references to health models and frames of reference that, with further development, can provide a theoretical foundation for practice. For example, Reed’s evaluation of health models, such as biopsychosocial, public health, health education, health development, and high-level wellness, provided an overview of approaches in the field. These models are neither independent nor comprehensive. The holistic and occupational performance models offer the most promise because they are grounded in social stress and role theory.

Mosey (1986) referred to the role acquisition frame of reference, emphasizing task and interpersonal skills that support the successful performance of social roles. This frame of reference is not intended for persons with severe dysfunction, but it has potential application for persons with problems in everyday living. Lastly, the Model of Human Occupation (Kielhofner & Burke, 1980) has been applied to nondysfunctional persons experiencing occupational role dysfunction. Khoo and Renwick (1989) used this theoretical framework to analyze the mental health needs of immigrant women and to make recommendations for direct and indirect services.

I find a role strain model appealing because of the recognized importance of role functioning in structuring time and defining one’s sense of self. Role strain functions as an organizing construct to explain mental disorders or behavioral dysfunctions. According to Pearlin and Schooler (1978), social and psychological resources are mobilized to reduce stress. More specifically, coping skills and social support should be examined in relation to a particular social role. Parenthood is such an example.

**Occupational Therapy Theory and Practice**

Role theory is central to occupational therapy practice. Fundamentally, occupational therapists are concerned with the person’s ability to adapt, to cope with the demands of everyday living, and to fulfill age-appropriate social roles.

There is specific reference to health in the definition of occupational therapy (American Medical Association [AMA]/AOTA, 1983), the philosophical statement (AOTA, 1979), the code of ethics (AOTA, 1988), and the essentials of an educational program (AMA/AOTA, 1983). From its inception, the purpose of occupational therapy has included the prevention of disease and disability as well as therapeutic intervention. Our philosophical base emphasizes the adaptive process and the belief that purposeful activity may be used to prevent and mediate dysfunction and to elicit maximum adaptation. The goals of primary prevention are also adaptive behavior and social competence.

Occupational therapy is essentially health and ability oriented, and its ecological and holistic orientation is congruent with the basic tenets of wellness. We must market ourselves as therapeutic and health agents to remediate dysfunction and promote health and well-being. As stated by Gilfoyle (1988), our commodity is productive living, and it is cost-effective. Occupational therapists must continue to identify high-risk populations and to design prevention services that promote healthy outcomes. The focus on young children and families is an attractive example because early intervention is a prudent investment in our human and financial resources.

With pressures for cost containment and the undersupply of mental health professionals, prevention is becoming a fiscally driven response to the growing prevalence of psychopathology. Many of today’s health problems result from dysfunctional life-styles and socioenvironmental conditions, thus a large percentage of the health care dollar is spent on social disability.

Persons experiencing occupational performance dysfunction are not referred through the medical system (Johnson & Kielhofner, 1983; Rogers, 1982), nor are the growing number of at-risk youth with social and school-related problems. For occupational therapists, the biomedical model is restrictive, because referrals for prevention services can come from a variety of human service providers. We must integrate health care with educational and social welfare programs.
and organize a coordinated system of care. Prevention programs should be offered in community organizations, such as day-care centers, schools, neighborhood centers, the workplace, senior citizen centers, and private practice locations. Occupational therapists are beginning to work in these settings and to engage in population-based planning, but these remain isolated initiatives.

One of the foremost tasks facing occupational therapists is to build and test prevention models for vulnerable populations. A role strain model is one attempt to integrate the theories underlying the life stress process with the clinical practice of occupational therapy. It must be noted that primary prevention is an interdisciplin ary endeavor and prevention models are not unique to occupational therapy. What is unique is our ability to analyze the performance components that support competent role performance and the value of occupation in maintaining health and preventing disability.

Using the empirical research on stress, support, and coping paradigms, occupational therapists can begin to develop practice models for specialization in primary prevention. There is an impressive research base on risk and protective factors and growing literature on the relationship between role satisfaction and mental health. It is time for occupational therapists to apply this knowledge to clinical practice and to develop practice models and frames of reference to work with the well community.

Acknowledgments

The maternal stress study was completed in partial fulfillment of the degree of Doctor of Public Health at Columbia University, New York. It was supported, in part, by a grant from the American Occupational Therapy Foundation to develop an occupational therapy prevention model.

References


Rider, B. A., & White, V. K. (1986). Occupational ther-


