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Child and Family Outcomes: A Comparison under Two Systems of Care in New York State

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ABSTRACT Since the development of the Child and Adolescent Service System Program (CASSP) in the United States, there has been a concerted effort in the field of children's mental health to develop systems of care that are child-centered, family-focused and community-based. Some years ago a unique opportunity arose to examine the process and outcomes of a parent-designed system of care in New York State in which the planning, development and coordination of the system of care were largely the responsibility of parents with children having special needs. This article reports the child and family outcomes of this quasi-experimental study comparing the family-designed system of care with a provider-designed system of care.

There is a great deal of support in the United States for the concept of a system of care as the philosophy and context for providing services to children and youth who have serious emotional disturbances. Stroul and Friedman (1986) have defined a system of care as, "...a comprehensive spectrum of mental health and other necessary services which are organized into a coordinated network to meet the multiple and changing needs of children and adolescents with severe emotional disturbances and their families" (p. xx). The core values of this system are that it must be child centered and family focused, community based and culturally competent. The components of the system of care include: mental health services, social services, educational services, health services, substance abuse services, vocational services, recreational services, and operational services such as case management and transportation (Stroul & Friedman, 1986).

Since the development of the Child and Adolescent Service System Program (CASSP) in 1984 (Lourie, Katz-Leavy, DeCarolis & Quinlan, 1996), there has been a concerted effort in the field of children's mental health to develop systems of care. Many, if not most, of these efforts have been top down approaches initiated by persons hired through CASSP grants to the 50 states or, more recently, through grants from the Center for Mental Health Services (CMHS) to local communities, states or native tribes. Many of these efforts have included parents in multiple aspects of these systems of care including participating in writing the grant proposal, providing services, and evaluating outcomes. Some years ago a unique opportunity arose to examine the process and outcomes of a parent-designed system of care in New York State. This was a grassroots process (Tannen, 1996a) in a rural county in which the planning, development and coordination of the system of care were largely the responsibility of parents with children having special needs. Through a partnership of the New York State Office of Mental Health's Bureau of Evaluation Research and Bureau of Children and Families and participants in two rural counties in New York, a grant was prepared and funded by the CMHS (Evans, 1992). The purpose of this grant was to examine the process of developing or enhancing a system of care, describe the changes in relationships among providers over time, and determine the outcomes for children and families. This article reports the child and family outcomes of this quasi-experimental study comparing the family-designed system of care with a provider-designed system of care.

In this study two rural counties were given an equal amount of financial resources, and evaluator time and attention over the course of three years. In Essex County, a large rural county in northeastern New York State, the resources were used to partially fund the development and operation of Families First in Essex County, a nonprofit parent organization that offered a range of services to children with emotional and behavioural problems and their families. The organization is described in a monograph by

Tannen (1996b). The outcomes of this intervention were compared with those associated with enhancing the provider-designed system of care in Herkimer County, a rural county on the western edge of the Adirondack mountains with similar population characteristics. In Herkimer County the infusion of resources stimulated the local providers to begin dialogue regarding resource use. Eventually they decided to use the flexible funds available through the grant to place social workers in the largest school system to provide in-school and in-home services to children with emotional and behavioural problems. During the last year of data collection the planning group in Herkimer County was investigating the possibilities of undertaking a more comprehensive school-based intervention or possibly hiring parent advocates to work with the social workers.

METHOD

The inputs to the interventions in both counties included the characteristics of the service system, the characteristics of the providers in each county, and the characteristics of the families and children served. These domains and the funds and other resources available to the counties for the service system planning process represented the inputs to the system of care. The input variables resulted in the planning and implementation processes essential to the development of the system of care in each county. In turn, the systems of care were expected to produce a number of proximal and distal outcomes. The proximal outcomes for the system included the nature of family involvement in the system, which was expected to affect the placement rates in hospitals and restrictive settings, perceptions of the service systems, and alterations in funding mechanisms and service delivery. The proximal provider outcomes included changes in provider attitudes and behaviours that would impact system, child and family outcomes. Finally, the proximal family outcomes were expected to affect more distal family and child outcomes such as family environment, child functioning, child self-concept and satisfaction with services.

This research included three related substudies: a qualitative study using case studies, interviews, observations and other ethnographic approaches, a network analysis; (Beckstead, Evans, & Thompson, 1998); and a treatment outcome study. The purpose of this article is to examine the child and family outcomes associated with the two approaches to developing a system of care. The effects of the interventions were analyzed using a 2 x 2 mixed-model design. County of residence defined the between-groups factor. Child and family functioning were measured at two points in time, on entry to the system of care and 9 months later, defining the within-subject factor.

In order to maximize the statistical power and generalizability of the analyses, two elements were incorporated into the research design. The first of these design elements was direct, often referred to as blocking or matching. This was done at two levels. The first level involved choosing a comparison county to Essex County in order to provide a "control group". In this process all the other 61 counties comprising New York State were considered and the selection of the comparison county (Herkimer) was based on maximal similarity to Essex County on a number of socioeconomic and demographic variables, including the stage of development of the child serving system in the county. Also important at this level of matching was the decision to use the within-subjects or repeated measures design in which the same children and families were assessed before and after the intervention. The second design element was the inclusion of a covariate, a relevant characteristic of participants which was expected to be correlated with the dependent variables. In this study, response on a social desirability scale was used as the covariate. This method further increased the power of the analysis by reducing the size of the error term used in the statistical tests.

Participants

Children (N=23) and their families who had not previously received mental health services (or who had received services more than 2 years before) participated in the study. The sample was limited to children who were identified as being in the clinical or at-risk population using the Child Behaviour Checklist (CBCL) (Achenbach, 1991) discussed below. The size of the rural populations

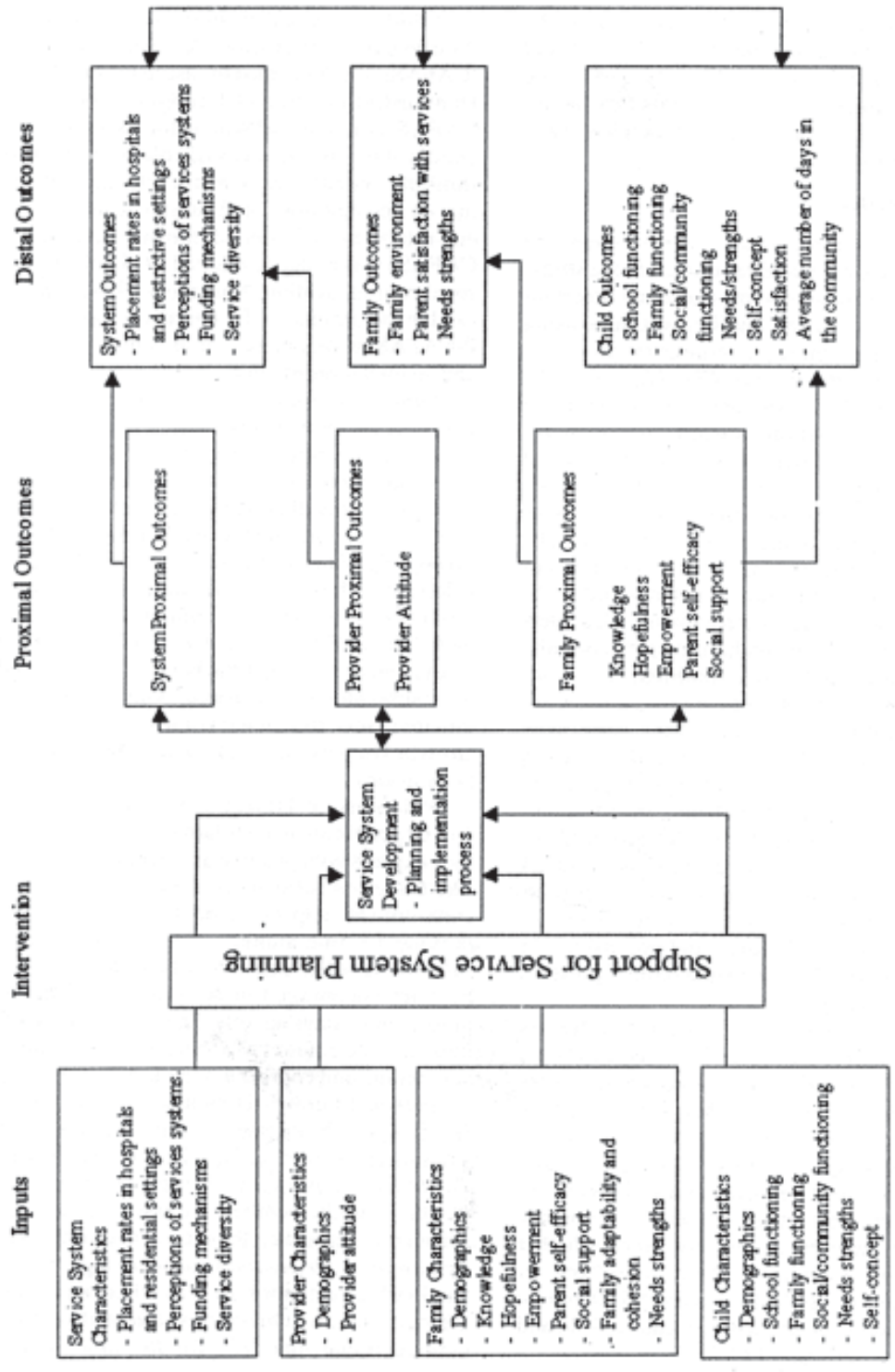

Fig. 1. Logic model for comparing parent and provider designed mental health systems of care for children and families

in these counties and the decision to limit the study to children at the highest level of risk and those who were not currently engaged in the system of care as it began to use its flexible resources severely limited the final sample sizes in both counties.

Instrumentation

Several instruments were used to operationalize the variables critical to the study. Measuring the degree of psychosocial functioning of the children and families was done using the following established intrumentation:

The Child Behaviour Checklist (CBCL) (Achenbach, 1991) was used to operationally define serious emotional disturbance or at-risk status. This instrument was completed by the parent(s) and provides a snapshot of the child's symptoms and behaviour. Behavioural problems as well as social competence are assessed. The behavioural problems scale distinguishes between two general groups of behavioural problems, internalizing and externalizing. This internalizing-externalizing dichotomy reflects a distinction between fearful, inhibited, overcontrolled behaviour and aggressive, antisocial, undercontrolled behaviour. These have been variously called Personality Problem versus Conduct Problem, Inhibition versus Aggression, Internalizing versus Externalizing, and Overcontrolled versus Undercontrolled. The social competence score reflects the parents' perceptions of the amount and quality of their child's participation in sports, hobbies, games, activities, organizations, jobs and chores, and friendships. In essence, the social competence score represents the child's strengths.

Child Self-Concept. The Piers-Harris Children's Self-Concept Scale (Piers, 1984) is a measure of the child's self-esteem and self-regard which focuses on the their conscious self-perceptions. It is an 80-item, self-report questionnaire designed to assess how children and adolescents feel about themselves. Children are shown statements that describe how some people feel about themselves, and are asked whether each statement applies to them using "yes" or "no" responses. Based on over 1,100 public school children the normative mean is 51.84 and the standard deviation 13.87.

Child's Level of Functioning. The Child and Adolescent Functional Assessment Scale (CAFAS) was developed for use in the Fort Bragg Demonstration Project (Hodges, 1990). The CAFAS contains subscales for assessing the child's status in the areas of role performance, thinking, behaviour toward self and others, moods and emotions, and substance use. A parent-interview version of the instrument (P-CAFAS) was being developed (K. Hodges, personal communication, November 1994) and was used in the present study. Parents completed the P-CAFAS twice, once at enrollment in the study, and again 9 months later.

Family Environment. The social climate of a family is its "personality." In many ways, each family has a unique social climate that gives it unity and coherence. Like some individuals, some families are friendlier than others; some are more competitive; some are more restrictive and controlling. The Family Environment Scale (FES) developed by Moos (1974) measures the social environment of all types of families. Parents completed the FES twice, once at enrollment in the study, and again 9 months later. It is composed of 10 subscales or dimensions, which are divided into three sets: Relational Dimensions, Personal Growth Dimensions, and System Maintenance Dimensions.

Relationship Dimensions assess how involved people are in their family and how openly they express both positive and negative feelings. The *Cohesion subscale* measures the degree of commitment, help, and support family members provide for one another. *The Expressiveness subscale* taps the extent to which family members are encouraged to act openly and to express their feelings directly. *The Conflict subscale* measures the amount of openly expressed anger, aggression, and conflict among family members.

Personal Growth Dimensions focus on the family's goals by tapping the major ways in which a family encourages or inhibits personal growth. *The Independence subscale* measures the extent to which family members are assertive, are self-sufficient, and make their own decisions. *The Achievement Orientation subscale* taps the extent to which activities, such as school and work, are cast into an achievement-oriented or competitive framework. *The Intellectual-Cultural*

Orientation subscale assesses the degree of interest in political, social, intellectual, and cultural activities. *The Active-Recreational Orientation subscale* taps the extent of participation in social and recreational activities. *The Moral-Religious subscale* measures the degree of emphasis on ethical and religious issues and values.

System Maintenance Dimensions assess the family's emphasis on clear organization, structure, rules, and procedures in running family life. *The Organization subscale* measures the importance of clear organization and structure in planning family activities and responsibilities. *The Control subscale* assesses the extent to which set rules and procedures are used to run family life.

Family Empowerment. The Family Empowerment Scale (Koren, DeChillo, & Friesen, 1992) was used to assess the degree to which participating parents felt in control during the process of receiving services. Empowerment is defined as "the ongoing capacity of individuals or groups to act on their own behalf to achieve a greater measure of control over their lives and destinies." Family empowerment can occur at three levels: *The Family level* — the parent's management of day-to-day situations; *the Service System level* — the parents actively working with the service system to get services that are needed by their child; and *the Community/Political level* — the parent's advocacy for improved services for children in general, rather than specifically for their own child. Scores on the total scale, as published, can range from 34 to 170 where higher scores indicate greater empowerment. Parents completed the Family Empowerment Scale twice, once at enrollment in the study, and again 9 months later.

Social Support. The Inventory of Socially Supportive Behaviours (ISSB) (Barrera, Sandler & Ramsey, 1981) is a self-report measure designed to assess how often individuals received various forms of assistance during the preceding month. The 40 items refer to a wide range of supportive behaviours including guidance, emotional support and tangible support. Studies examining the factor structure of the ISSB show considerable agreement: there are three clusters of items; however, as scales these are highly intercorrelated and may be best interpreted as a unidimensional construct. Scores on the ISSB range from 40 to 200 with higher scores indicating greater amounts of social support. There are no normative values published; however, based on data from over 1,000 college students a score of 96.2 appears average. Evans et al. (1999) used this instrument in their study of families in the Bronx receiving intensive in-home services as a result of having a child who was experiencing a psychiatric crisis. They found that families averaged between 70 and 80, following the intervention, depending on the type of program in which they had been enrolled. Parents completed the ISSB twice, once at enrollment in the study, and again 9 months later.

Hopefulness. Hope is defined as an overall perception that one's goals can be met (Snyder et al., 1991, Snyder, Sympson, Ybasco, Borders, & Higgins, 1994). There are two ways of conceptualizing hope, dispositional and temporal. As a dispositional concept, hope is a stable cognitive set comprising *agency* (belief in one's capacity to initiate and sustain actions) and *pathways* (belief in one's capacity to generate routes to reach goals.) Hope may also be thought of as a temporal state that is related to the ongoing events in the lives of people. State hope, as measured in a given moment, provides a snapshot of a person's current goal-directed thinking. Parents completed the Hope Scales twice, once at enrollment in the study, and again 9 months later.

Social Desirability. The Marlowe-Crowne Social Desirability Scale (MCSDS) (Crowne & Marlow, 1960) was used to assess social desirability of parent responses. This instrument was included so that the degree of social desirability present in the data could be estimated, and if significant, removed using partial-correlation techniques. Social desirability is "an approval motivation" or "a motivation to avoid disapproval." Scores range from 0 to 33, with higher scores representing greater motivation to avoid disapproval. Compared to low scorers, high scorers respond more to social influence and avoid being evaluated by others, even when there is as much possibility for positive as for negative evaluation. Parents completed the MCSDS twice, once at enrollment in the study, and again 9 months later.

PROCEDURES

Children and families presenting at various intake sites (mental health clinics, psychiatric hospitals, and schools) were approached about participating in the study. If a family agreed to participate, the parent or guardian was asked to complete the CBCL as part of the screening process. Families with children who were assessed as meeting the serious or at-risk criteria were then contacted with the details of the study. Following informed consent, in-home interviews were used to collect data from participating families. Standardized self-report instruments were completed by children and parents under the supervision and guidance of trained research staff, independent of the service providers.

RESULTS

The research design employed could be analyzed using a variety of statistical methods (e.g., chi-square tests, Mann-Whitney U tests, Friedman two-way analysis of variance by ranks). However, in selecting the dependent variables, great care was taken to obtain measurements that closely approximate interval level data (Stevens, 1946). Therefore the use of parametric tests, specifically traditional analysis of variance, seemed appropriate. This approach and the corresponding *F* tests offered the most powerful statistical test of these data. Given that small sample size restricts the researchers' ability to find statistically significant differences among group means or medians, this approach seemed prudent. In the analysis of data from parents, the MCSDS was used as a covariate to further increase the power of the analyses.

The CBCL was used to operationally define children with emotional and behavioural problems. A T-score of 63 represents the upper limit of the normal range on the Internalizing, Externalizing, and Total Behavioural Problem scales. The Essex and Herkimer samples scored 71, 76 and 76, respectively on these scales, well within the clinical range. A T-score of 38-39 represents the lower limit of the normal range on the Social Competence Scale. The average score for the Essex and Herkimer samples was 33, indicating a low level of social competence.

Family Environment subscales. The family environment in which these children lived was assessed and compared with the published normative values for the Family Environment Scale. The families participating in this study were characterized by higher scores on the Conflict, Control, and Moral-Religious Orientation subscales when compared with normative scores. They also had lower scores on the Independence and Active-Recreational Orientation subscales. All these comparisons (*z* tests) were significant at the $p<.05$ level. There were no significant differences between the scores of the two groups of families on any of the ten subscales, nor were there any significant changes on any of the subscales over time.

Changes in psychosocial functioning. Changes in the level of each child's psychosocial functioning were examined using the self-report data from the Piers-Harris self concept scale and the perceptions provided by the child's parent(s) by way of the structured parent-interview, the P-CAFAS. There was no significant difference between the two groups of children on the self-concept scale. However, when analyzed as a single group, ANOVA revealed that there was a significant improvement in children's self concept over time T_1=48.69 and T_2=54.12, $F(1,21)=5.15$, $p<.05$. The Piers-Harris contains a subscale measuring how popular the child perceives him or herself to be. A similar analysis revealed a significant improvement on this subscale over the nine months time T_1=5.97 and T_2=7.65, $F(1,21)=9.30$, $p<.05$.

The P-CAFAS contains subscales for assessing the child's status in the areas of role performance, thinking, behaviour toward self and others, moods and emotions, and substance use from the parents' perspective. There was no significant difference between the two groups of children. However, when analyzed as a single group, ANCOVA revealed that there was a significant improvement over time in children's level of functioning on two of the five subscales. Scores on the P-CAFAS reflect the degree of impairment, that is, lower scores indicate less impairment of function. Children showed significant improvement in role performance T_1=10.35 and T_2=8.09, $F(1,20)=8.23$, $p<.05$ over time. They also showed significant improvement in moods and emotions

over time T_1=10.8 and T_2=8.00, $F(1,20)$=4.80, p <.05.

Family Empowerment. As a result of experiencing the family involvement efforts in Essex County, it was expected that parents would show an increased sense of empowerment in the process of obtaining services for their children. This was assessed using the Family Empowerment Scale. There was no significant difference between the two groups of parents completing the Family Empowerment Scale, nor did these groups show any significant change over time. The mean score for the 23 families was 120.

Social Support. The Inventory of Socially Supportive Behaviours was used to assess how often parents received various forms of assistance such as guidance, emotional support, and tangible support during a preceding one month period. There was no significant difference between the two groups of parents completing the ISSB. Nor did these groups show any significant change over time. The mean score 94.1, was somewhat higher than the score noted among families with a child in psychiatric crisis in the Bronx (Evans et al. 1999). Barrera conducted four studies on 447 college students and found an average score of 101. Both the Bronx and the Essex and Herkimer County's family samples had lower average scores than those found by Barrera. (Barrera, 1993).

Hopefulness. As a dispositional concept, hope is a stable cognitive set. Hope may also be thought of as a temporal state that is related to the ongoing events in the lives of people. Hope, as measured in a given moment, provides a snapshot of a person's current goal-directed thinking. There were no significant differences between the scores of the two groups of parents on the temporal hope scale. Nor were there any significant changes on the scale over time (mean =3.12). As a dispositional concept, hope is stable over time. There were no differences between the two groups of parents (mean =3.15). A correlational analysis was conducted to examine if the hopefulness reported by parents was related to significant changes in their child's psychosocial functioning. A significant partial correlation, controlling for social desirability, between hopefulness and changes on the P-CAFAS moods and emotions subscale (r_s=.50) suggests that improvement in a child's functioning was greater where parents degree of hopefulness was greater.

DISCUSSION

For more than 10 years the field of children's mental health has been characterized by the idea and philosophy that developing and implementing systems of care, partnering with parents, and individualizing care would result in improved outcomes for children with emotional and behavioural problems. Bickman et al.'s (1995) evaluation of the Fort Bragg demonstration and the Stark County system of care (Bickman, Noser, & Summerfelt, 1999) have indicated that putting a system of care in place is not sufficient to produce superior child outcomes when compared to service systems not organized on system of care principles and values. Other studies (Clark, Lee, Prange, & McDonald, 1996; Evans, Armstrong, Kuppinger, Huz, & McNulty, 1998; Henggeler, Melton & Smith, 1992) have shown superior outcomes for children and families engaged in individualized services and/or ecologically-based services, even when they have not been enrolled in systems of care that are modeled on the principles and values articulated by Stroul and Friedman (1986). How can these findings be explained and what implications do they have for the future of children's mental health services? Ever since the Fort Bragg study outcomes were published, researchers, family advocates, and service providers have been debating these questions (e.g., see *Journal of Child & Family Studies*, 5 (2) 1996). There is continued support for the development of systems of care, particularly through funding available from the Center for Mental Health Services. However, particularly among researchers there is a sense that systems of care without quality services available to children and families are unlikely to result in more positive outcomes than other organizational, delivery and financing arrangements. That is, systems of care interventions may result in system outcomes, but not in positive child and family outcomes, unless attention is given to ensuring the quality and effectiveness of the interventions embedded within the system of care. Research is needed to examine this question in greater detail.

What did we learn in this small and relatively short-term study that could inform this discussion? Based on the role performance and the moods and emotions scales of the P-CAFAS, it would appear that the children in both counties showed improvement in their level of psychosocial functioning over the nine months in which they were followed. These children felt better about themselves and their parents perceived improvement in their behaviours, role performance and emotions over the period of nine months. In other words, we learned that the majority of children with serious mental health problems who are admitted to care, regardless of the existence of systems of care, show significant improvement over time. This has been observed by others, including Bickman, Heflinger, Lambert, and Summerfelt (1996). We learned that families in these rural counties, like their counterparts in the Bronx, have relatively impoverished social support systems. Interventions that are designed to assist families that have a child with emotional and behavioural disorders should consider ways of increasing the size and quality of the families' social networks and resources available to families. We also learned that higher levels of parental hope are associated with better child functioning. It was a parent group that advised the research team to examine the relationship between hope and outcomes. Parental hopefulness is a state or phenomenon that has been little studied in the field of children's mental health and appears worthy of additional study. Being researchers, we cannot help identifying the need for additional research over extended periods of time to assess the child and family outcomes associated with different organizational, delivery and financial arrangements for providing services to children with serious emotional disturbance and their families.

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