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Abstract

This study describes the impact of a lifestyle planning model on four people who had high support needs and challenging behaviours. While this model required quite lengthy initial procedures to assess a person's current lifestyle, strengths and interests, its implementation had a positive impact on each participant's lifestyle in terms of increased inclusive activities and social networks, and decreased destructive behaviours. **Keyword: Individualisation**

Application of a Lifestyle Development Process for Persons with Severe Intellectual Disabilities: A Case Study Report

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This report summarizes the results of four data-based case studies that examined the efficacy of the Lifestyle Development Process (LDP) for persons with severe disabilities. The process involves five steps, described in detail in the paper. The planning process was implemented by means of a consultant model, and involved planning meetings, on-site visits, in-service training, problem solving, written program planning, and demonstrations of instructional techniques. The consulting teams were composed of educational and behavioral consultants. Four persons with severe disabilities and challenging behaviors were participants. These individuals resided in four communities in the Province of British Columbia, and received consultative services from 1989 through 1991. All four individuals engaged

in a greater number of preferred, integrated activities during the mid- and posttests than at baseline. Their social networks and program quality scores also showed various degrees of improvement. The behavior problems that were reported at the referral stage were substantially reduced at the posttest for all individuals. These results are discussed in relation to previous research in the areas of lifestyle planning and behavior management. Problems in implementing the process by means of a consultant model are also discussed, and areas for future research are identified.

DESCRIPTORS: behavior management, communication training, community integration, friendship, individualized instruction, lifestyle planning, quality of life, participation

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Planning processes for persons with severe disabilities have increasingly emphasized the importance of concepts such as full inclusion, community presence and participation, and choice making (Brown et al., 1983, 1991; Guess, Benson, & Siegel-Causey, 1985). A number of planning models have been introduced in this regard, including "Lifestyle Planning" (O'Brien & Lyle, 1987), "Personal Futures Planning" (PFP) (Mount, 1987; Mount & Zwernik, 1988), and the "McGill Ac-

tion Planning System" (MAPS) (Vandercook, York, & Forest, 1989). These models are based on the principle that collaborative efforts by family members, friends, and service providers are necessary if quality lifestyles are to be achieved for individuals with disabilities (O'Brien & Lyle, 1987).

Despite the widespread use of these models, almost no empirical data are available to document the outcomes and effectiveness of these three approaches. One exception is the work of Mount (1987), who compared the outcomes achieved for six individuals with intellectual disabilities through the PFP process with those achieved for six control participants through the traditional individualized program plan (IPP) process. She found that, whereas none of the IPP participants showed evidence of significant lifestyle changes over a 1-year period, two of the six individuals in the PFP group did experience such outcomes. It was unclear, however, the extent to which these changes could be directly attributed to the PFP process per se. In addition, Vandercook et al. (1989) provided detailed anecdotal histories documenting the changes that occurred in the lives of several individuals who were involved in the MAPS process.

The purpose of the present report is to describe a fourth planning model, the "Lifestyle Development Process (LDP)," that incorporates the values and many of the procedures of its predecessors. In addition, interventions based on current "best practices" in the fields of behavioral, communication, and instructional programming are utilized. The LDP incorporates outcome measures to evaluate changes in the target individual's social and activity patterns and to evaluate intervention effectiveness.

Method

Participants

This report focuses on two children and two adults with severe intellectual disabilities who were referred for LDP consultative services by a school, government agency, adult service provider, or family member. All four participants received services in their home districts by two or more members of the consulting team.

Laura. Laura was a 34-year-old woman who lived with her parents in a small seaside community in British Columbia. Laura had severe intellectual disabilities and dual sensory impairments (cataracts and profound hearing loss) secondary to rubella syndrome. Laura received instruction either in her home or in segregated school facilities until she reached the age of 21. After this, she remained at home with her parents most of the time, except for a 1-year period when she was placed in a sheltered workshop in her community. This placement was terminated because the workshop staff and Laura's family agreed that it did not meet her needs. Shortly thereafter, she was referred to the consulting team by

her parents and her social worker. The main concerns at the time of referral were Laura's lack of effective communication skills, her excessive ritualistic/stereotypic behaviors, and her need for meaningful community participation and/or employment.

At the time of referral, Laura had no speech, but used approximately 25–30 Blissymbols (Hehner, 1980), written words, gestures, and vocalizations for communication. She was reported by her caregivers to enjoy a range of home and community activities, including going to the post office, swimming, folding laundry, and a variety of other domestic and leisure activities. She mastered the steps of various routines easily. However, when delays or interruptions occurred, she became agitated and reverted to ritualistic behaviors, such as tracing and retracing her steps for hours at a time. In addition, she frequently stayed up for much of the night engaged in these behaviors, and then was too tired or disinterested to engage in many activities the next day. Once she started her rituals, she refused to accept further instruction or mediation. Thorazine (chlorpromazine) 60 mg/day for "depression," and Noctec (choral hydrate) as necessary at night for sleep had been prescribed by her physician, but were not administered consistently by her caregivers.

Bob. Bob was a 53-year-old man with severe intellectual disabilities who lived in a large provincial institution for 40 years. He left the institution in May, 1989, when it was permanently closed. At this time, Bob moved into a supported duplex apartment in a large urban center, with a male roommate who also moved from the institution. Although Bob's family was contacted by service providers, they did not wish to be involved in planning. Bob had no friends or acquaintances outside of the institution. Bob was referred to the consulting team by his community service provider, who provided vocational and residential services to persons with intellectual disabilities.

Bob's abilities were quite limited; according to the staff in his home, he was able to dress, eat, and drink independently but required assistance with all other self-care routines. He had never participated in regular domestic, vocational, or leisure routines and thus had few skills in these areas. He required systematic instruction with many repetitions in order to master new tasks or routines. Bob did not speak and did not show evidence of an accurate "yes/no" response; he communicated primarily through a few simple gestures (e.g., pointing and reaching toward desired items), with considerable support from staff. His preferences were limited to walking outdoors, eating, and picking up small objects. Bob had a "collection" of many such items (e.g., a bottle cap, a plastic stacking ring), and always carried at least one of them in his hands at all times. This restricted his ability to participate without assistance in a range of activities; furthermore, if one of his

items was misplaced or lost, Bob yelled, screamed, and turned over furniture until it was found. Frequently, these behaviors occurred at night, when Bob usually took "inventory" of his items and often discovered that one was missing. He was then likely to be awake for hours, screaming, yelling, pounding on the bedroom walls, and urinating and defecating on the floor. In fact, it was these behavioral excesses that were the main reason for Bob's referral to the LDP team. In January 1990, Bob was taking Artane (trihexphenidyl), 4 mg/day; Colace (docusate sodium), 240 mg/day; Mellaril (thioridazine), 200 mg/day; and Noctec (chloral hydrate), 1000 mg if needed at bedtime.

Susan. Susan was a 7-year-old girl with autism and a seizure disorder who lived at home with her natural family. At the time of intervention, she was taking Depakene (valproic acid) and Frisium (clobazam) twice daily for her seizures, which were under good control. She attended an integrated preschool program from 1985 to 1986, and was then placed in a segregated school for her first 2 years of elementary education. At that point, Susan's mother requested that Susan be placed in her neighborhood school in a regular Grade 3 class. This request was granted by school district officials, who then contacted the consulting team in the spring of 1990 to request assistance in developing a transition and curricular plan for Susan.

At the time of referral, Susan had an expressive vocabulary of approximately 40–50 spoken words (e.g., *sit here, come, mom, yes, no*); she did not show evidence of echolalia. Observations and teacher reports indicated that she was quite adept at processing and using visual information, and that she had difficulty following complex verbal instructions. She liked to be in control of her environment and functioned better when she could anticipate upcoming events and routines. Her favorite activities were swimming, listening to music, looking at books, riding in a bus or car, playing lotto and other matching games, and looking at pictures. She disliked waiting, new activities, not knowing what was expected of her, large groups, physical education, and academic work in general. Susan's academic skills were very limited; she could not read, write, or count. At school, she exhibited a number of "resistant" behaviors, including scratching, pinching, and "flopping to the ground" prior to a scheduled activity. These behaviors were of considerable concern to the school staff and her family, and substantially prevented Susan from participating in many classroom routines.

Carol. Carol was an 8-year-old girl with Sanfilippo syndrome, also known as mucopolysaccharidosis III (MPS III). This syndrome is a progressive, degenerative neurological disorder that causes rapid deterioration of language, self-care, behavioral, and other skills. It is ultimately fatal, although some individuals with the syndrome have been known to live into their late 20s

or 30s. Carol had developed normally until October, 1989, and had participated in a regular school curriculum as a kindergartner during the 1988–1989 school year. In October, 1989, it was observed that her language and self-care skills were rapidly deteriorating, and that she was becoming hyperactive and increasingly aggressive toward her peers. Within 2 months, she lost the ability to speak and did not appear to understand what was said to her. Her gait became unsteady, although she was still able to walk. Her family sought medical assistance and a diagnosis of Sanfilippo syndrome was made. Concurrently, the feasibility of maintaining Carol at home and at school was raised by the school and medical staff involved with her care. Because of aggressive and screaming behaviors, a decision was made to remove Carol from her neighborhood school and place her in a self-contained soundproof room with padding on the walls in an elementary school across town. A referral to the consulting team was initiated in November, 1989, by Carol's social worker and her parents. The family sought guidance in the areas of curriculum planning, behavior management, environmental management, communication strategies, and general "survival" skills. The situation was described as urgent.

At the time of her referral, Carol had no speech, no ability to respond to "yes/no" questions, and no apparent receptive language abilities. Her parents and school staff agreed that she could not identify the members of her family by name, follow simple commands, or make accurate choices between two objects or pictures when presented with a verbal label. She required substantial assistance with all self-care routines, and had "lost" all of her previous academic skills (e.g., reading, writing, drawing, counting). Although her gait was quite ataxic, she was still able to walk unassisted; in fact, one of her favorite activities was running freely outdoors. She slept no more than 4 hr per night and was extremely hyperactive when awake, engaging in frequent episodes of screaming and tantruming. She required constant attention because of her aggressive behavior, especially toward her younger sister and other, smaller children. She took no regular medications.

Procedures

Two separate consulting teams provided services to the children and adults described in this report. The adult team consisted of a speech-language pathologist, three behavior consultants, and one instructional consultant. The children's team consisted of two education/behavior consultants. After a referral to the consulting agency had been initiated by a social worker, parent, or service provider, an initial planning meeting was convened with all relevant parties. During this meeting, the consultants explained the values, assumptions, procedures, and strategies incorporated by the Lifestyle De-

velopment Process. In addition, they emphasized that their role would be to assist in developing an appropriate action plan and related interventions, not to supplant the traditional roles of the service delivery or educational staff (Janney & Meyer, 1990). If all of the relevant parties agreed to participate, the LDP was implemented.

Written inventories, field observations, interviews with family and service providers, record reviews, and videotape analyses were used during Step 1 of the LDP to gather baseline information about each participant's preferences, activity patterns, daily and weekly schedules, communication and behavioral skills, medication history, learning strengths and weaknesses, and other relevant factors. During intervention, a variety of data collection systems that were "user friendly" (Janney & Meyer, 1990) were used by direct care staff. These included daily written logs and detailed "critical incident" reports that were completed whenever property destruction or aggression against other people occurred. Daily frequency and duration data were collected for all behaviors of concern, and data on skill acquisition were collected via monthly probe trials. The time of implementation for the participants in this report ranged from 4 to 16 months, depending on individual needs and circumstances. During this time, one or more consultants met with the service providers and/or families on a variable schedule, initially once or more each week and decreasing gradually to once a month or less. Basically, there were five steps and three evaluation measures involved in the LDP, as described in the sections that follow.

Basic Steps of the LDP

Step 1: Vision planning. Similar to processes used in PFP (Mount & Zwernik, 1988) and related models (e.g., MAPS), this step of the LDP assisted family members, friends, neighbors, service providers, and others to describe their vision of a quality life in the community for the target individual. Whenever possible, the target individual was included in this step of the process as well. During this step, information was obtained concerning the target individual's: (a) background and history; (b) current daily and weekly schedule; (c) current program placement; (d) current social and friendship network; (e) behavioral, communication, and/or skill excesses and/or deficits, and the current intervention approaches to each of these; and (f) primary caregiver skills and attitudes. The individual's current daily and weekly schedules were compiled and compared to those of a typical, nondisabled peer (i.e., a nondisabled individual of the same age, gender, and cultural background as the target individual). The discrepancies between the two were identified and documented as baseline information, along with other evaluation measures that will be described in a subsequent section.

Step 2: Assessing and remediating barriers to partic-

ipation. This step involved a process for assessing and remediating service delivery or other barriers that were interfering with the target individual's ability to participate in integrated school or community settings. Such barriers included, for example, restrictive staff or administrative attitudes, a lack of integrated vocational or recreational options, insufficient funding or staff supports, and differences of opinion regarding values and meaningful outcomes. Once potential barriers were identified, a variety of strategies were used to attempt to remediate them, as part of what Gallessich (1985) referred to as "social/political consultation" (p. 417). In all cases, a variety of research and literature review articles that addressed the barrier(s) of concern were provided to the relevant service providers. In some cases, videotaped case studies of persons who had been assisted, through the LDP process, to move from very restrictive to integrated school or vocational placements were used to illustrate the process to service providers. In other cases, negotiating strategies based on the principles of "game theory" (Zagare, 1984), in which "win-win" solutions are the ultimate goal, were developed and applied. When this was the case, meetings were held with administrators and/or key service providers who had authority over and control of the factors creating specific barriers. On occasion, recognized experts were asked to provide input at these meetings, which continued to be held until the major participation barriers had been removed. If it became clear that barrier resolution was impossible, the LDP process was terminated and the service providers were assisted to locate another consultation resource.

Step 3: Assembling meaningful routines and schedules. This step emphasized identification of the capacities, strengths, and preferences of the target individual. Service providers were taught to identify where and with whom the individual wanted to live, work, relax, and spend leisure time. They were also taught to analyze the person's daily schedule in light of his or her learning strengths, learning styles, and capacities. These activities involved the target individual as well as the key people who knew him or her best. Planning meetings, informal home and community-based interviews, and observations were used to gather the required information. The result of this step was the development of daily and weekly schedules that included goals and objectives related to where and with whom the person would live, work, go to school, and spend leisure time. Typically, mid-intervention evaluation data were collected after the implementation of Step 3; for the four participants described in this report, this occurred within 5-9 months of baseline.

Step 4: Developing specific intervention strategies. One of the ways in which the LDP differs from more traditional intervention procedures is that specific intervention programs to address behavioral, communi-

cation, and/or skill deficits are not instituted until participation barriers have been remediated (Step 2) and meaningful lifestyle changes have been instituted (Step 3). In Step 4, programs and staff training were provided in areas such as: (a) functional analysis of behavior and application of nonaversive behavior management strategies (Durand, 1990; LaVigna & Donnellan, 1986; O'Neill, Horner, Albin, Storey, & Sprague, 1990); (b) augmentative and alternative communication assessment and intervention techniques (Mirenda, Iacono, & Williams, 1990); and/or (c) systematic instructional strategies (Snell, 1987), as needed. Of course, the strategies implemented during this step depended on the target individual's needs and the goals that were during established during Step 1.

Step 5: Evaluating effectiveness and developing a monitoring system. During this final step, the target individual's daily and weekly schedules were reviewed to determine the extent to which they reflected the goals, objectives, and intervention strategies identified in the preceding steps. This review also evaluated the extent to which the lifestyle discrepancies identified in Step 1 had been eliminated. Postintervention data were collected as a component of Step 5.

Measurement of Intervention Effectiveness

Three empirically validated measures were utilized to evaluate intervention effectiveness related to lifestyle changes.

The Resident Lifestyle Inventory (RLI). The RLI (Wilcox & Bellamy, 1987) is a 17-page interview form that requires approximately 45 min to administer and provides information on 144 different leisure and personal management activities taken from listings in *The Activities Catalogue* (Newton et al., 1987). Specifically, the RLI measures (a) the types of activities that are performed by the target individual during a 1-month period, (b) how often each activity occurs, (c) where each activity typically occurs, (d) which activities are preferred, and (e) the level of support needed for participation by the target individual. One of the consultants collected the information for the RLI from each target individual and at least two additional persons who had daily contact with the individual during the intervention and for at least 6 months prior to its initiation. For Laura, the informants were her mother, father, and a day program worker; for Bob, they were two key residential/day program providers; for Susan, they were her mother, father, teacher, and a teacher's aide; and for Carol, they were her mother, father, a teacher's aide, and a child care worker. All RLI interviews were conducted in the target individuals' homes or schools. The RLI was administered during Steps 1 and 3 and following Step 5 of the LDP for Laura, Bob, and Carol. Because the duration of Susan's intervention was quite short, her RLI data were collected during Step 1 and after Step 5 only.

Kennedy, Horner, Newton, and Kanda (1990) reported that the RLI has moderate to high congruent validity when compared with a similar valid, reliable instrument, the Valued Outcomes Information System (VOIS) (Newton et al., 1988). Pearson product-moment correlations between variables measured with the RLI and the VOIS ranged from $r = .564$ to $r = .812$, indicating that it is a valid means of gathering information about activity patterns. In addition, Kennedy et al. (1990) found the RLI to have moderate to high test-retest reliability, with mean percentage agreements ranging from 75.5 to 93.3 over an average time interval of 3.6 days. Finally, a social validation assessment of the RLI indicated that direct support staff and program managers perceived it as useful in preparing the content of individual program plans and in facilitating the choices and preferences of residents (Kennedy et al., 1990).

Social Network Analysis Form (SNAF). The SNAF (Kennedy, Horner, & Newton, 1990; Kennedy et al., 1990) is a three-page form used in a 15-30-min interview to gather information about the social network of a person with disabilities. It elicits information about (a) the persons who are socially important in the life of the target individual, and (b) the types and frequencies of activities in which persons in the social network typically engage with the individual. The SNAF was administered to the same individuals and at the same time intervals used for the RLI. Kanda (1989) reported that the overall test-retest reliability of the SNAF across individuals ranged from .60 to 1.0 (median = .83).

Program Quality Indicators (PQI) checklist. The PQI checklist (Meyer, Eichinger, & Park-Lee, 1987) contains 123 items that represent the "most promising practices" in educational programs for persons with severe disabilities, as gleaned from a literature review and survey of nationally recognized experts in the field. It can be used to assess the content of individualized education plan (IEP) goals and objectives, and many items are also applicable to IPP analyses. Selected items from the PQI checklist were administered by the first author during Step 1 and following Step 5 of the LDP for all four participants. For the two adult participants (Laura and Bob), Section 6 of the PQI (Facilities and Resources) and several individual items in other sections were omitted because they specifically addressed school-based issues, which were not relevant. In addition, several items were omitted because adequate information was not available from the service providers. For Carol and Susan, the items deleted from the PQI were all related to secondary school issues that did not directly affect the quality of their programs (e.g., Item 5: "the program philosophy emphasizes the goals of competitive and/or supported employment in integrated, community work placements"). The informants for the PQI were the key support staff and program coordina-

tors for Laura and Bob, and the classroom teachers for Susan and Carol.

Meyer et al. (1987) reported validation data for the PQI that indicated that, with the exception of nine items, all of the checklist statements were assigned ratings of 13 or more on a 20-point scale on which 0 = not a consideration, 10 = undecided, and 20 = very important consideration by a group of 254 parents and professionals in the field. In general, these findings provide support for the social validity of the PQI.

Interventions

Laura. The initial "vision planning" meeting for Laura (Step 1) was held in September, 1988, and was attended by two members of the consulting team, Laura, her parents, her social worker, and a friend. Baseline RLI, SNAF, and PQI data were collected at this time, and the following goals were identified: (a) to involve Laura in meaningful employment, (b) to help Laura develop relationships in the community, (c) to develop Laura's communication skills, (d) to increase Laura's participation in exercise activities, and (e) to reduce Laura's ritualistic/stereotypic behaviors. The major components of Laura's intervention (LDP Steps 2-4) are summarized in Table 1.

Interviews with relevant persons and direct observations of Laura's daily activities revealed a number of barriers to community participation. The major barrier was that Laura received services through a provider with whom her parents had substantive philosophical disagreements. The provider believed that Laura should be placed in a specialized group home for other persons with dual sensory impairments that was located in a community far from her family; Laura and her family wanted her to continue to live in her natural home, in the community where she grew up. Thus, during Step

2, a variety of published research articles, as well as videotaped case studies of similar individuals who were successfully living and working in the community, were used to explain a community-based program philosophy to Laura's social worker and service provider. Eventually, they agreed that a work and recreational plan would be attempted for Laura in her own community, with the assistance of a different provider who was receptive to delivering integrated adult services. Over the next several months, the consultants assisted Laura's parents in training the new service provider to provide individualized services to Laura.

During Step 3, the consultants assessed Laura's strengths and needs in a range of community, recreational, and vocational environments. Together with her parents and new service provider, they revised her daily schedule to reflect more of the goals identified during vision planning. Although her activity pattern and social network gradually expanded, Laura continued to experience frequent communication breakdowns and ritualistic behavior. Thus, in Step 4, the consultants assisted her service providers to conduct functional analyses of her behavior (O'Neill et al., 1990) and to assess her current communication capabilities in detail (Mirenda et al., 1990). Based on these analyses, a multielement intervention plan was designed that incorporated (a) functional communication training (Durand, 1990); (b) a pictorial calendar and time management system (Rowland & Schweigert, 1990); (c) systematic task analyses to teach new skills (Snell, 1987); and (d) videotapes and written teaching strategies for staff training. These interventions were implemented over the subsequent 12-month period.

Bob. Bob's "vision planning" meeting (Step 1) was conducted in March, 1990, and involved the consulting

Table 1
Major Intervention Components for Case Study Participants

Name	Intervention components	
Laura	Change in service provider Change in daily/weekly schedule Functional communication training Pictorial schedule and expanded communication system	Task analyses of new skills Staff training Ongoing data collection and feedback
Bob	Six-month preference assessment Part-time paid employment Small toy program (multielement)	Calendar box Choice-making program Ongoing data collection and feedback
Susan	Staff and family consultation Pictorial schedule Curricular adaptations Lotto games during recess with peers Shorter activities	Small group instruction/cooperative learning Functional, community-based instruction Communication/conversation programs Choice of nap at midday Ongoing data collection and evaluation
Carol	Resolution of philosophical differences Increased child care worker support Change in daily/weekly schedule Inclusion of preferred activities Circle of friends intervention Task analyses and instructional programs	Real object schedule Ecological interventions Teaching functional communication skills Choice-making intervention Reintegration into regular classroom Ongoing data collection and evaluation

team and his key service providers. Baseline data were collected at this time, and the following goals were identified: (a) to identify his strengths and preferences; (b) to develop a comprehensive, integrated daily and weekly schedule based on his strengths and preferences; (c) to increase the size of his social network; and (d) to reduce the frequency and intensity of his behavioral outbursts.

The primary components of Bob's intervention are summarized in Table 1. Bob's service provider already incorporated many of the standards that are considered to be "best practices," and no significant service delivery barriers to participation were identified during Step 2. Therefore, during Step 3, the focus shifted to exploring a wide variety of new activities with Bob, in order to assess his preferences and strengths. Over the next 6 months, a number of Bob's personal strengths and preferences started to emerge.

Despite Step 3 activities, Bob's placement in his supported apartment was in jeopardy because of socially unacceptable behaviors that kept his neighbors up at night and resulted in property destruction. Thus, Step 4 involved an extensive functional analysis of his behavior (O'Neill et al., 1990), followed by multiple ecological and instructional programs (Snell, 1987) designed to (a) minimize the likelihood that one of his small toys would be misplaced, (b) help Bob manage his anxiety when this did occur, and (c) teach him functional alternatives to carrying the toys around. He was also provided with a "calendar box" to represent his daily schedule, and began to use real object symbols to make choices (Rowland & Schweigert, 1990). These programs were instituted over a 7-month period.

Susan. An initial "vision planning" meeting (Step 1) was held at Susan's school in October, 1990, and was attended by Susan's mother, the school team, the school principal, and the consulting team. Susan's classmates did not attend the meeting; rather, the school staff decided to elicit information from them in a less formal context. Baseline data were collected from observations and from parent and teacher interviews, and the school team and Susan's mother agreed on the following goals: (a) to help Susan make friends, (b) to help Susan enjoy and participate in classroom activities, and (c) to enable Susan to acquire new skills at school.

The primary components of Susan's intervention are summarized in Table 1. An assessment of participation barriers (Step 2) failed to reveal any overt, systemic problems in this area. The school team expressed positive attitudes toward the process of integration, and Susan was not pulled out of the classroom for any portion of the day. However, there were discrepancies between the expectations of Susan's family and the school staff, largely because her frequent resistive behavior at school was in contrast to her behavior at

home, where she willingly engaged in a variety of activities.

When examining Susan's schedule during Steps 3 and 4, the consultants and the school team hypothesized that her apparent dislike of school, as reflected in her refusal to participate in most classroom activities, was related to her current curriculum and how it was presented to her. It also appeared that Susan's classmates tended to remain at a distance from her because of her behavioral outbursts. Thus, adjustments to her classroom schedule were instituted concurrently with a multi-element intervention that was designed to address the behavioral, curricular, and social concerns simultaneously. The components of this intervention included numerous schedule, curricular, and instructional adaptations, as summarized in Table 1. Communication strategies such as teaching her to ask for a break at the first signs of agitation (Durand, 1990), teaching her peers to recognize and respond to gestural signals of distress, and teaching both Susan and her classmates to initiate conversations using a photograph book (Hunt, Alwell, & Goetz, 1988) were also implemented. Finally, the team noted that Susan usually slept in the classroom between the hours of 10:00 and 11:00 a.m. It was hypothesized that this was related to her seizure disorder and the medication schedule that was required to keep the seizures under control. Susan was offered the choice of sleeping in a designated area at the back of the class at this hour. These interventions were instituted over a 4-month period.

Carol. An initial "vision planning" meeting (Step 1) was held at Carol's home in November, 1989. The meeting was attended by the consultants, Carol's parents, and her sister, and focused on identifying Carol's existing and desired future schedule of activities. The following goals were established at that time: (a) to provide Carol with the supports necessary for her to participate in preferred activities, and (b) to provide Carol's family with the supports needed for them to keep her at home and function as a relatively "normal" family.

A summary of the major components of Carol's intervention is provided in Table 1. Because of the rapidly degenerative nature of her illness, numerous professionals were involved in planning for her future, including her parents, two provincial consultants, three LDP consultants, and her physician. During Step 2, numerous barriers to participation were identified, including a recommendation to institutionalize Carol and a recommendation for one-to-one day care (Nidiffer & Kelly, 1983). The LDP consultants, Carol's family, and the social service agency providers felt that Carol should be supported in whatever manner would be necessary to reintegrate her into her previous network of friends in her neighborhood school. These discrepant opinions required a series of meetings between November 1989,

and March 1990, among the parents and professionals involved, as well as additional experts in the area of integration, to negotiate and resolve the differences. Written materials, videotaped case studies, and meetings with recognized experts in the field were used during this portion of the consultation. The school district stated that, if it could be demonstrated that integrated activities were mutually beneficial to Carol and her peers over the upcoming summer months, Carol could begin reintegration into the regular school system in September, 1990.

In June, 1990, two additional summer program staff were hired and trained to provide support to Carol for 8 hr each day. Together with Carol's parents and the consultants, they initiated Step 3 by planning a schedule that contained numerous unrestricted "high-energy" activities that Carol seemed to enjoy. "Low"- or "moderate"-energy activities that she preferred were also planned regularly, including taking baths and buying yogurt at the store. In addition, Carol's parents compiled a list of Carol's old friends from her neighborhood school, and contacted the parents of five of these children to discuss reuniting her with her peers, some of whom thought that Carol had died. All five parents agreed to have their children participate in activities with Carol. Subsequently, meetings were held with the children to solicit their ideas for involving Carol in a range of motivating activities and to share with them strategies for managing her aggression. The "circle of friends" and MAPS processes (Vandercook et al., 1989) were used to structure these meetings and to enlist the involvement of Carol's peers. At least daily activities with these peers were instituted over the summer months.

After her participation in integrated activities had markedly increased, Carol still required almost total assistance to engage in these activities. Therefore, during Step 4, instructional interventions were developed to teach Carol a variety of functional skills. Carol's service providers were taught to develop task analyses and to systematically fade and shape their instructional cues (Billingsley & Romer, 1983). Ecological strategies such as placing safety locks on cupboards were also incorporated in the plan. Real object symbols were used to signal the beginning of each activity, and to allow Carol to make choices among activities (Rowland & Schweigert, 1990). Carol's peers were taught to shake her hand when she approached them; this strategy seemed to interrupt her aggression, which seemed to function, in part, as a greeting behavior.

A meeting was held in September, 1990, with Carol's school team, after the Step 4 interventions had been in place for 1 month. An itinerant teacher had been hired to provide one-to-one instruction to Carol in the self-contained classroom she had used during the previous year. However, after reviewing the summer progress

reports and videotapes of Carol and her friends, the school team agreed to reenroll Carol in her neighborhood school. All of those involved agreed that Carol required a slow transition to an integrated school environment; thus, lunch, recess, and gym were identified as the initial integration points. The remainder of Carol's day was to be spent in the community.

Results

Laura

Table 2 summarizes the baseline, mid-intervention, and postintervention evaluation data for Laura. The baseline review of Laura's daily and weekly schedules revealed numerous discrepancies between the goals identified and Laura's existing lifestyle. For example, although she had engaged in 101 activities during the baseline month, only 39 of these occurred in the community. She was unemployed and exercised infrequently. Her social network consisted of two friends, four paid staff, and five family members; most of her activities occurred with the latter group of people. Only 32% of the PQIs were evident in Laura's overall program. During much of the day, Laura engaged in 2-3-hr episodes of pacing back and forth in repetitive patterns that could not be interrupted without screaming, tantruming, and aggression.

By May, 1989, when mid-intervention data were collected, the total number of activities in which Laura engaged during the month prior to data collection had increased by more than 300% over baseline; and the total number of preferred community activities had almost doubled. Her social network had expanded to include a neighbor and a co-worker with whom she occasionally socialized outside of work.

In June, 1990, 16 months after the initial referral, RLI data for Laura indicated that 35 of the 36 different activities in which she regularly engaged were preferred by her. A total of 84 preferred community activities had been performed during the preceding month. Socially, Laura's SNAF scores indicated that three new persons outside of her paid and family circles had been added to her social network (one friend, one neighbor, and one co-worker). The overall PQI score for her program was 72%.

Bob

Table 3 summarizes the baseline, mid-intervention, and postintervention evaluation data for Bob. Examination of Bob's initial assessment data in March, 1990, revealed that, in general, his existing lifestyle was quite varied and balanced. For example, 201 community activities were documented for Bob during the baseline period; however, all of these were performed with paid staff members. One of Bob's neighbors was the only unpaid person in Bob's life.

The mid-intervention measures collected in August, 1990, indicated that Bob was participating in several

Table 2
Baseline, Mid-intervention, and Postintervention Scores for Laura

Measure	Baseline (9/88)	Mid (5/89)	Post (6/90)
RLI (total category sum scores)			
Number of activities	101	360	286
Number of different activities	24	31	36
Number of preferred different activities	17	28	35
Number of preferred community activities	39	77	84
SNAF (total category sum scores)			
Number of people paid to provide service	4	1	2
Number of activities with paid people	24	60	55
Number of friends	2	2	3
Number of activities with friends	8	8	10
Number of neighbors/others	0	1	1
Number of activities with neighbors/others	0	1	4
Number of family members	5	5	5
Number of activities with family members	53	50	50
Number of co-workers	0	1	1
Number of activities with co-workers	0	4	4
PQI checklist (percentage of items in evidence/area)			
Program philosophy (items 1-18)	28%		81%
Program design and opportunities for learning (items 19-27, 33, 34, 36)	38%		73%
Systematic instruction and performance evaluation (items 41-64)	42%		60%
IPP development and parent participation (items 65-84)	25%		80%
Staff development and team collaboration (items 85, 86, 89, 90, 95, 96, 101)	21%		71%
Overall percentage of PQI items evident in IPP	32%		72%

Table 3
Baseline, Mid-intervention, and Postintervention Scores for Bob

Measure	Baseline (3/90)	Mid (8/90)	Post (3/91)
RLI (total category sum scores)			
Number of activities	220	267	385
Number of different activities	22	22	32
Number of preferred different activities	19	22	32
Number of preferred community activities	201	250	224
SNAF (total category sum scores)			
Number of people paid to provide service	4	4	4
Number of activities with paid people	220	267	385
Number of friends	0	0	0
Number of activities with friends	0	0	0
Number of neighbors/others	1	2	3
Number of activities with neighbors/others	1	16	24
Number of family members	0	0	0
Number of activities with family members	0	0	0
Number of co-workers	0	0	0
Number of activities with co-workers	0	0	0
PQI checklist (percentage of items in evidence/area)			
Program philosophy (items 1-18)	94%		100%
Program design and opportunities for learning (items 19-27, 33, 34, 36)	69%		88%
Systematic instruction and performance evaluation (items 41-64)	64%		79%
IPP development and parent participation (items 65-84)	64%		88%
Staff development and team collaboration (items 85, 86, 89, 90, 95, 96, 101)	57%		78%
Overall percentage of PQI items evident in IPP	71%		85%

additional preferred activities, both at home and in the community. In addition, the SNAF scores reflect a slight increase in Bob's social network and an increase in the number of activities he performed with unpaid people from 1 (baseline) to 16.

In March, 1991, Bob's RLI scores indicated that he had engaged in a total of 32 different activities during the previous month, all of which were preferred by him. Over half of these were functional household routines;

this represented a substantive increase over baseline, when he engaged in no activities of this type. He accessed the community 224 times during this month, which represented a slight increase over baseline. Bob's SNAF scores indicated that his social network consisted of four paid staff and three neighbors who had befriended him. However, he had engaged in 24 activities with these neighbors during the previous month, a marked increase compared to his baseline rate of 1

activity. The PQI score for Bob's program was 85%, representing an increase of 14 percentage points over baseline.

Susan

Table 4 summarizes the baseline and postintervention evaluation data for Susan. A review of Susan's baseline schedule in October, 1990, revealed that it was essentially identical to that of her classmates. She had participated in a total of 405 activities during the previous month; of these, 143 were integrated community or school activities. She participated in 45 different activities; however, fewer than half of these were preferred by her, and the majority of the nonpreferred activities took place in school. Susan's social network outside of her family and paid staff consisted of five children in her class who consistently greeted her in the morning and played with her in the playground. Susan did not have any friends visit her home during the baseline period.

Five months later, the data showed evidence of gains in all three of Susan's goal areas. She had participated in 38 different and 316 total preferred activities during the previous month, representing over a 200% increase in this category over baseline. The increase was attributed to the fact that Susan was participating in 80% of all classroom activities (compared with 20% at baseline). Susan's social network of friends from school had increased from six to eight children. She engaged in 146 total activities with these friends, including after-school visits to her house, "sleep overs," and birthday parties. The PQI score for her program had increased from 68% to 81%.

Carol

Table 5 summarizes the baseline, mid-intervention, and postintervention evaluation data for Carol. In November, 1989, examination of Carol's baseline daily and weekly schedules revealed that she had engaged in only 11 different activities during the preceding month, and that her only community-based activity was an occasional walk in the neighborhood, which she enjoyed. The majority of Carol's time was spent in a self-contained classroom with a one-to-one teaching aide and in home activities with her parents and sister. Carol's entire social network consisted of her family and paid instructional or child care worker staff, including trained respite care staff who provided services to Carol outside of her home for one weekend each month. Her PQI score was 43% at this time.

Nine months later (in August, 1990), mid-intervention data were collected. Carol had participated in a total of 90 preferred community activities during the previous month, representing almost a 500% increase over baseline. Thirty of these activities were performed with one or more of the five friends with whom Carol interacted over the summer months.

By February, 1991, when consultant input was formally terminated, substantive progress had been made in both of the goal areas. Carol had engaged in 63 integrated community and school activities during the previous month. These included her regular gym class, recess, lunch, and swimming with two peers from her school at a nearby pool. She had eight friends and participated in 15 activities with them during the preceding month; this represented an increase over baseline

Table 4
Baseline and Postintervention Scores for Susan

Measure	Baseline (10/90)	Post (3/91)
RLI (total category sum scores)		
Number of activities	405	562
Number of different activities	45	53
Number of preferred different activities	20	38
Number of preferred community activities	143	316
SNAF (total category sum scores)		
Number of people paid to provide service	4	4
Number of activities with paid people	21	21
Number of friends	6	8
Number of activities with friends	120	146
Number of neighbors/others	0	0
Number of activities with neighbors/others	0	0
Number of family members	3	3
Number of activities with family members	25	140
PQI checklist (percentage of items in evidence/area)		
Program philosophy (items 1-5, 7-18)	76%	94%
Program design and opportunities for learning (items 19, 20, 23-25, 27-40)	80%	93%
Systematic instruction and performance evaluation (items 41-64)	56%	70%
IPP development and parent participation (items 65-75, 77-79, 81-84)	47%	66%
Staff development and team collaboration (items 85-89, 93-95, 98, 100-104)	66%	77%
Facilities and resources (items 105-113, 115, 118, 119, 121-123)	86%	86%
Overall percentage of PQI items evident in IEP	68%	81%

Table 5
Baseline, Mid-intervention, and Postintervention Scores for Carol

Measure	Baseline (11/89)	Mid (8/90)	Post (2/91)
RLI (total category sum scores)			
Number of activities	172	391	295
Number of different activities	11	21	18
Number of preferred different activities	6	19	16
Number of preferred community activities	19	90	63
SNAF (total category sum scores)			
Number of people paid to provide service	2	9	9
Number of activities with paid people	80	190	165
Number of friends	0	5	8
Number of activities with friends	0	30	15
Number of neighbors/others	0	0	0
Number of activities with neighbors/others	0	0	0
Number of family members	3	5	3
Number of activities with family members	92	152	130
PQI checklist (percentage of items in evidence/area)			
Program philosophy (items 1-5, 7-18)	41%		65%
Program design and opportunities for learning (items 19, 20, 23-25, 27-40)	38%		63%
Systematic instruction and performance evaluation (items 41-64)	47%		60%
IPP development and parent participation (items 65-75, 77-79, 81-84)	25%		70%
Staff development and team collaboration (items 85-89, 93-95, 98, 100-104)	50%		55%
Facilities and resources (items 105-113, 115, 118, 119, 121-123)	57%		62%
Overall percentage of PQI items evident in IEP	43%		63%

but a decrease over the mid-intervention data, which were collected during the summer when Carol and her friends had daily contact. Carol's program was given a PQI score of 63% at this time, reflecting an improvement of 20% over baseline.

Discussion

This report extends the previous literature on lifestyle planning models for persons with severe disabilities. The results suggested that, to varying degrees, the Lifestyle Development Process had a positive impact on the activity patterns and social networks of the four individuals who participated in the case studies. All four participants were engaged in a greater number of integrated activities during the mid- and postintervention periods, compared with baseline. Three of the four participants experienced gains of more than 200% in the number of preferred, integrated activities they performed at the end of the intervention period. The two adults in this study were engaged in the first integrated work opportunities of their lives. The two children participated to various degrees in regular classroom activities in their neighborhood schools. Finally, all four participants experienced at least slight increases in their unpaid social networks, and performed a greater number of integrated activities with people who were not paid to spend time with them. This extends the data reported by Mount (1987) concerning the development of lifestyle plans that are based on individuals' strengths and capacities rather than their deficits.

Although it is not possible to attribute causation in the context of a case study report, all four participants

showed evidence of improved behavior and communication skills over the course of the LDP intervention. At postintervention, Laura's expressive vocabulary had increased by 20 Blissymbols, she had learned to write the names of people in her social network, and she experienced considerably fewer communication breakdowns. Finally, Laura was independent in most of her daily activities and routines, and her stereotypic/ritualistic behaviors had been reduced substantially. Bob still required more than minimal support to complete all activities, except for garbage collection and bathing. He was sleeping through the night most of the time, and his destructive behavior had decreased dramatically in both frequency and intensity. He was able to engage in several regular activities without holding his small items. In addition, Bob was beginning to initiate activities independently using real object symbols. Susan's resistant behaviors had decreased markedly, and her aggression had been reduced substantially. Carol's aggressive behaviors were no longer of major concern at home or in school. Her family had established numerous routines and support mechanisms in the community, and her home placement was no longer in jeopardy, despite the fact that her physical condition continued to deteriorate.

The participants also acquired a number of age-appropriate and functional skills in home, work, and community settings. Improvement in these areas continued for all four participants even after the formal LDP consultation was completed. Laura now folds laundry on a volunteer basis at a local intermediate care facility 2 days each week, and paints with a friend in a

local store 1 day per week. In recent months, her ritualistic behavior has increased somewhat over its postintervention level. Her mother believes that this is due to boredom, and additional community activities, including formal literacy instruction, are being arranged to remediate this. Bob now shares a duplex apartment in a suburban neighborhood with a nondisabled male roommate, and is looking for a new, full-time employment opportunity, having worked in the recycling business for 3 years. Susan is a fully integrated participant in a regular Grade 3 classroom, has several friends who play with her regularly after school, and has developed considerable spontaneous speech over the past year. Finally, Carol also attends Grade 3 with her nondisabled classmates, who have formed a strong support system for her. Although her health continues to deteriorate, she enjoys school and continues to access the community on a regular basis.

The data also suggest a number of areas that require increased attention. In particular, a lack of substantive change in the social network scores for the two adult participants suggests that additional, systematic attention needs to be paid to this area. The importance of a rich social life for persons with disabilities has only recently emerged as a component of program planning, probably because little empirical information is available to guide families, service providers, and researchers in this area (Kennedy, Horner, & Newton, 1990). In addition, Barrera (1986) suggested that neither the service delivery system nor the community as a whole has a clear understanding of what defines a "social life," much less how to measure the extent to which it occurs. Although Susan's social network seemed to increase without direct interventions aimed at this goal, Carol's circumstances required quite deliberate activities in this regard. However, building networks for Bob and Laura remained a challenge. Perhaps direct, systematic interventions for these two individuals might have helped to increase their networks beyond the few friends and acquaintances they acquired during intervention.

All four participants' programs reflected an increase in the number of validated "most promising practices" on the PQI during postintervention data collection. The overall percentage gains from pre- to posttest ranged from 13% to 43%. The lowest pretest scores were reported in the most segregated programs (Laura's and Carol's), which is consistent with the findings of Hunt, Goetz, and Anderson (1986) regarding the impact of integrated placements on the quality of program plans. It should be noted, however, that the overall percentage of program quality indicators during the posttest ranged from 63% to 85%, indicating that even the "best" program in this area (Bob's) failed to reflect all of the desired best practices. Specific analyses of the deficiencies at this point might enable staff to determine the

relative importance of each and to plan related interventions, as necessary.

The results of this report must be interpreted cautiously in light of several factors. The most important of these is that, because of the multielement nature of the LDP intervention, no experimental or causal documentation is available. In addition, in order for a participant to be included in this report, all of the steps of his or her LDP had to be completed. Since completion was substantially dependent on the ability of service providers and families to commit to and carry out the process, selection bias may limit the degree to which the findings can be generalized. Also, the small sample size further limits generalizability. In an attempt to limit these shortcomings, data were collected in four separate locations that represented four different program placements along the LRE continuum. In addition, a number of data collection techniques such as videotaping, frequency and duration recording, direct observations, and interviews were used to control experimenter bias (Borg & Gall, 1989). Finally, extensive placement and program histories were compiled, and data collection occurred at predetermined intervals that coincided with specific steps of the LDP, in order to minimize the effects of outside influences on the results.

Future research efforts are needed to establish norms for instruments such as the RLI and SNAF, so that planners and researchers can evaluate the extent to which the activity patterns and social networks of individuals with severe disabilities resemble those of same-age peers without disabilities. Future research should also involve assessment of the functional relationships between multielement planning and support models and their outcomes. Finally, research is needed to identify strategies for conducting lifestyle planning for individuals who receive services in highly restrictive programs such as day activity centers and large sheltered workshops.

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