

# INTRODUCTION

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Researchers in Europe and the United States have routinely reported that the behavioral changes following onset of neurological disorders and injuries pose a far greater problem than physical changes. Changes commonly reported by clinicians include diminished motivation, limited self-awareness, and disinhibition. Active forms of aggression frequently encountered include yelling, use of profanity, and hitting. Often aggression is indirectly expressed in the form of negativism and passive aggressiveness. These behaviors contribute to anxiety among other patients, family members, and staff. Furthermore, participation and consequent gains in rehabilitation are diminished.

Speculation has suggested that a variety of factors contribute to adverse behavioral changes. Neurophysiological and neurochemical changes commonly follow neurological disorders and have been offered as an explanation. Others have suggested that problematic behaviors existed to a lesser extent before disease onset and have been exacerbated by neurologically related chemical and cognitive changes. Still others attribute problem behaviors to cognitive dysfunction and negative emotional reactions to perceptions of severe disability. Many patients encounter severe frustration when attempting to carry out activities formerly accomplished with ease. Psychologists have examined the causal linkages between frustration and aggression for years.

The exact causes of behavioral disorders have not yet been established, especially with regard to neuroanatomical and neurochemical factors. Nevertheless, professionals have learned that the frequency and number of adaptive behaviors displayed by patients can be increased by using a variety of techniques. The beneficial application of behavioral techniques has been advanced during the last three decades through biochemical and radiological research techniques. The work of B.F. Skinner provided an important foundation for understanding relationships between environmental factors and behavior. Skinner inspired numerous investigations and his writing provided a framework for the development of contemporary behavior management practices.

The 1960s saw a rapid proliferation of behavior management programs. Unfortunately, exponential growth yielded an increase in programs that relied on aversive techniques including overcorrection, electric shock, and withholding fundamental privileges. Use of aversive techniques contributed to an increasingly negative image for behavior management programs. The resulting public outcry and concerns expressed by consumers were important factors in shaping contemporary behavior management practices.

The negative image of behavior management has faded with the recent emphasis on consumer involvement in treatment planning and informed consent. With careful consideration and after soliciting input from many constituencies, guidelines for ethical and humane behavioral treatment have been established. The use of aversive techniques has been replaced by time-out procedures and extinction. Tremendous emphasis has been placed on shaping positive behaviors, rather than diminishing negative behaviors.

The maturing of the behavioral management field has contributed to increasing application in the rehabilitation field. Many inpatient and outpatient rehabilitation programs consider behavior management practices a fundamental program element. Clinicians are also working to help family members understand and use behavioral principles. Interactions between patient and staff behaviors are being carefully examined.

This issue of *NeuroRehabilitation* is not intended to provide a complete overview of behavior management practices in rehabilitation settings. Rather, we have set out to accomplish a more modest goal, namely to describe a set of applications in inpatient and outpatient settings. Information on pharmacological and traditional behavioral practices is provided. The effect of behavior difficulties on families and staff members is described. Humane and rational suggestions for positive behavioral changes within rehabilitation programs are also provided. Our intention is to help clinicians apply behavioral practices more effectively and to encourage the implementation of research programs that enhance program effectiveness.

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