ABSTRACT. A major factor in the increased need for health and long term care services for the elderly at advanced ages is the higher prevalence of multiple chronic diseases and functional impairments at those ages. The association of chronic morbidity and disability has been well studied in developed countries. However, there is relatively little evidence on those associations in developing countries. In this paper we report on data from the WHO regional office of the Western Pacific-sponsored surveys conducted in four countries (the Republic of Korea, the Philippines, Malaysia and Fiji) which provide detailed information on that association. These data are analyzed using a multivariate analytic procedure that can identify both distinctive morbidity/disability patterns and the subgroups which manifest these patterns. In addition, we examine the implications of those relations for elderly persons' ability to remain socially and economically integrated.

Key Words: impairments, Grade of Membership, developing countries, handicaps, social roles, the Republic of Korea, Philippines, Malaysia, Fiji.

I. INTRODUCTION

Functional limitations at advanced ages are a serious burden in economically developed countries where public agencies are specially instituted to deal with the problems of the disabled elderly and where extensive private resources often exist to provide special equipment and housing to deal with the functional problems of the very old. Much less is known about the problems of the functionally impaired elderly in economically less developed countries. These problems relate to degree and type of impairment, availability of informal care, and integration of the impaired elderly in society.

In this paper we analyze data from surveys conducted in 1984 in Malaysia, the Philippines, the Republic of Korea and Fiji — four developing countries in the Western Pacific region (Andrews, Esterman, Braunack-Mayer and Runge 1986). A survey of the elderly aged 60 and over was conducted in each of these countries under the auspices of the World Health Organization (WHO) regional office of the Western Pacific. Utilizing a standard questionnaire, these surveys assessed the functional, health, and social status of elderly persons in the community. While the main purpose of these surveys was to assess the status of older persons for the individual countries, in most cases for the first time, a research opportunity exists for further examination of these issues in a comparative,
cross-national approach. In so doing, we also can determine how results relate to those found using similar methodologies in developed countries. The results of those surveys are examined using an analytic procedure called the 'Grade of Membership' (GOM) analysis (Woodbury and Manton 1982). This mode of analysis allows us to identify subgroups on the basis of their probability of having a wide range of functional and health attributes. After identifying subgroups according to their functional and health status, we examined how well those groups are integrated into a number of social and family functions.

II. DATA

Data are drawn from four surveys of noninstitutionalized persons aged 60 and over in Malaysia, the Republic of Korea, the Philippines and Fiji. The samples in the Republic of Korea and Fiji were designed to cover the entire countries, while in Malaysia it included only Peninsula Malaysia, and in the Philippines the Tagalog Region of Luzon (21% of the Philippine population). The sample may be viewed as representative of the populations covered for persons at ages over 60 years, by sex, and by rural and urban residence. Specific information was collected on health status, limitations in both activities of daily living (ADL) and instrumental activities of daily living (IADL), equipment used to deal with such limitations, health service use, living arrangements, and informal care and social interactions.

III. METHOD OF ANALYSIS

The method of analysis employed is a GOM analysis, a multivariate procedure for identifying subpopulations characterized by a complex profile of conditions (Manton, Stallard, Woodbury and Yashin 1986a; Manton, Stallard, Woodbury, Tolley and Yashin 1986b). The procedure has been applied successfully in a series of analyses of functionally disabled elderly persons where those functional limitations interact with other health characteristics (Clive, Woodbury and Siegler 1983; Manton, Liu and Cornelius 1985; Manton et al. 1986a, b). The special feature of the GOM analysis that makes it appropriate for analysis of the interaction of morbidity and disability is that the groups it defines are not exclusive, i.e., a person may be a partial member of more than one group in the sense that one's observed characteristics represent a mixture of the characteristics from two or more of the analytically defined groups. This ability to represent partial membership in two or more groups is important