Chapter-V

DISCUSSION AND CONCLUSION
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The main findings of the present research study are: (1) Health internally oriented and health externally oriented subjects do not differ with respect to health maintenance behavior; (2) hardy and non-hardy subjects do not differ with respect to health maintenance behavior; (3) young and old subjects do not differ with respect to health maintenance behavior; (4) male subjects are found more conscious about their health than female subjects; (5) there is no interactional effect of health locus of control and hardiness on health maintenance behavior; (6) there is no interactional effect of health locus of control and age on health maintenance behavior; (7) there is no interactional effect of health locus of control and sex on health maintenance behavior; (8) there is no interactional effect of hardiness and age on health maintenance behavior; (9) there is no interactional effect of hardiness and sex on health maintenance behavior; (10) there is no interactional effect of age and sex on health maintenance behavior; (11) there is an interactional effect of health locus of control, hardiness and age on health maintenance behavior; (12) there is an interactional effect of health locus of control, hardiness and sex on health maintenance behavior; (13) there is an interactional effect of health locus of control, age and sex on health maintenance behavior; (14) there is an interactional effect of hardiness, age and sex on health maintenance behavior; and (15) an interactional effect exists among health locus of control, hardiness, age and sex on health maintenance behavior.

The first finding of the present study, i.e., health internally oriented subjects and health externally oriented subjects do not differ with respect to health maintenance behavior, is not only unexpected but is also contrary to the findings obtained by numerous researchers. Thus a large number of researchers have reported that those who strongly believe that internal factors control their health can seek more health related information, remember the information better, and respond more readily to messages encouraging medical
examinations than do those who believe in external control (Seeman and Seeman, 1983; Quadrel and Lau, 1989). Other researchers such as Peterson, Seligman and Vallant (1988) and Scheier, et al. (1989) have found that pessimistic individuals die at an earlier age than those who are optimistic. Moreover, these researchers have reported that the more optimistic the coronary patients, the better they coped with the surgery and the faster they recovered physically and returned to their normal activities. These findings are not in consonance with the findings of our research. However, the finding of the present study may be explained in the light of the due point expressed by Burger, McWard and Latorre (1989) who pointed out that though control is valued by most people, there are times when it is freely given up and that "behavioral control" may be surrendered in order to maintain "perceived control" over one's well-being. Thus it is highly reasonable to assume that the sample of subjects used in the present investigation might have surrendered their behavioral control in order to maintain perceived control. This mechanism may be responsible for the absence of any difference between internally oriented and externally oriented subjects with respect to health maintenance behavior.

The first finding of our research is in line with the findings recently obtained by Norman Paul, Bennett Paul and Murphy (1997) who found weak correlation between health locus of control and exercise behavior.

The absence of any difference between internally oriented and externally oriented subjects with respect to health maintenance behavior might also be due to the fact that we have used health related LOC Scale developed by Wallston, Wallston, Kaplan and Maides (1976) which categorises the individuals into two categories having (1) internal health locus of control and (2) external health locus of control, whereas majority of researchers have used Multi-Dimensional Health Locus Control Scale developed by Wallston, Wallston and Devellis (1978) which divides the individuals into three types.
with: (1) internal health locus of control, (2) powerful-others' locus of control and (3) chance locus of control. A simple glance at these three types of individuals reveals that there is not a marked difference between powerful others' health locus of control and chance locus of control, and these two types are similar to external health locus of control used in the present study.

Moreover, there is another aspect of personal control besides internality/externality, that is important too. This aspect is our sense of self-efficacy—the belief that we can succeed at some thing we want to do (Bandura, 1977, 1986). People estimate their chances of success and failure on the basis of their prior observations of the effects that a given activity had for themselves and others. People with a strong sense of self-efficacy show less psychological and physiological strain in response to stressors than do those with a weak sense of efficacy (Bandura, Reese, and Adams 1982; Bandura et al. 1985; Holahan, Holahan and Belk, 1984). Thus it is possible that the internal and external oriented subjects of our study might be having more or less equal strength of sense of self-efficacy leading thereby to similar attitudes towards health maintenance behavior.

Furthermore, the difference in the assessment of health locus of control may be responsible for differences in the findings obtained by the present author and those obtained by other researchers, mentioned above. In order to resolve the issue of conflicting findings further research is needed in which both scales, i.e., Health Locus of Control Scale as developed by Wallston, Wallston, Kaplan and Maides (1976) and Multi-dimensional Health Locus of Control Scale should be used to assess health locus of control and then to examine whether or not a difference exists.

The final explanation for the first finding of our research is that health locus of control is just one of many factors that influence the practice of healthful behavior. The belief in internal control appears to have a greater impact on the behavior of people who place a high value on their health than on
that of those who do not (Lau, Hartman and Ware, 1986; Costa, Jessor and Donovan, 1989). Thus in order to resolve the existing inconsistencies with regard to the impact of health locus of control on health maintenance behavior a research should be designed taking into account the contribution of “value on good health” and “self-efficacy” besides health locus of control.

As mentioned earlier, hardy people are expected to remain healthier under stressful conditions than those whose personalities are less hardy simply because of the fact that hardy individuals are better able to deal with stressors and are less likely to become anxious and aroused by these events (Kobasa, 1979). The results of some studies support this prediction while the findings of others do not. The studies carried out by Kobasa (1979); Kobasa, Maddi and Puccetti (1982); Kobasa, Maddi, Puccetti and Zola (1985) provide support to this prediction by demonstrating that hardy individuals report having developed fewer illnesses during extended stressful periods than less hardy people. Other studies have found that people who are high in hardiness tend to deal more effectively with stressful situations than people with low hardiness do. (Holahan & Moos, 1985; Williams, Wiebe and Smith, 1992).

The second finding of our research, i.e., hardy and non-hardy subjects do not differ with respect to health maintenance behavior, does not provide empirical support to the assumption made by Kobasa (1979) and, therefore, is not in consonance with the findings obtained by numerous investigators as mentioned above. However, the finding of the present study provides empirical support to the observations made by Hull, Van Treuren and Virmelli (1987) and Funk (1992), who have argued that tests used in assessing hardiness may simply be measuring negative effect, such as the tendency to be anxious, depressed, or hostile. There is substantial amount of evidence to the effect that anxiety, hostility and depression are detrimental to good health and cause coronary problems (Dembrosk & Costa, 1987; Engebretson, Mathews &

The very fact that some individuals are highly health conscious and others seem to have little concern about their health, leads some researchers to believe that hardy individuals are likely to be more health conscious and, therefore, practise more certain behaviors that benefit their health as compared to non-hardy individuals. In other words, it is generally believed that since hardy individuals are better able to deal with stressors and are less likely to become anxious and aroused by stressful situations, they are more likely to be highly health conscious whereas non-hardy individuals who are deficient in dealing with stressors and are more likely to become anxious and aroused by stressful situations, they are supposed to be less health conscious. This theoretical conclusion, though seems quite reasonable, is neither supported by the finding of the present study nor endorsed by other researchers. Contrary to this theoretical conclusion, it is found by some researchers that (1) individuals who practise certain behaviors that benefit their health do not necessarily practise other healthful behaviors; (2) they do not continue to perform these behaviors over time; and (3) though health habits are fairly stable, they often change over time (Harris & Guten, 1979; Langlie, 1977; Mechanic, 1979). On the basis of these observations and findings, it is highly reasonable to assume that hardy and non-hardy subjects may differ with respect to health protective behavior but may not necessarily differ with respect to health maintenance behavior. The second finding of the present investigation provides empirical evidence to this assumption.

Moreover, since the concept and measurement of hardiness is uncertain at this time, related aspects of personality are clearly involved in maintaining health. It is, therefore, suggested that researchers in the future will need to clarify what these personality variables are and how they operate. (Sarafino, 1998).
The third finding of the present research, i.e., young and old subjects do not differ with respect to health maintenance behavior, appears contrary to the findings obtained by many researchers. Belloc and Breslow (1972) and Leventhal, Prohaska and Hirschman (1985), for instance, have found that older people are more likely than younger ones to engage in various health behaviors, such as eating healthful diets and getting medical checkups. Though we have not obtained a significant difference between old and young subjects with regard to health maintenance behavior, yet a trend may be noticed to the effect that older people are more concerned with their health maintenance behavior than younger subjects. If we draw our attention to Table IV, we find that mean of the means for older subjects on health maintenance behavior is slightly higher than the mean of the means for younger subjects. Though this difference is not statistically significant, it certainly shows a trend which is in agreement with the findings obtained by researchers referred to above.

However, an important question arises here. Do these age related improvements in health behavior indicate that older people become more concerned about health habits as they get older? The answer to this critical question is probably “yes”, but this is not clear for two reasons. First, developmental research on the practice of health behavior has generally used cross-sectional methods. Age related increases in the percentages of individuals who practise healthful behaviors may simply reflect an increased rate of survival of people who engage in these habits. Second, older and younger adults have very similar beliefs regarding the effectiveness of these behaviors in preventing such chronic illnesses as high blood pressure, heart attacks and cancer. The absence of any significant difference between young and old subjects with respect to health maintenance behavior provides strong support to this contention.

Researchers investigating the effect of sex differences on health maintenance behavior have obtained conflicting findings. Some researchers
have reported that females are more health conscious and undertake health protective behavior more than males. Other researchers, on the other hand, have suggested that males show greater health maintenance behavior than females. Kristiansen (1989), Miller and Cafasso (1992), Kohlmann, Carl-Walter, Gerdi; Dotzane, Elke and Burns, Lawrence (1997) support the former viewpoint by demonstrating that women scored higher than men on self-care vehicle safety and drug avoidance. Moreover, NIAAA (1993) also provided support to the former contention by reporting that males drink more than females and drug use is far more prevalent in males than in females. Johnston, O’Malley and Bachman (1995) and USBC (1995), on the other hand, provide support to the latter viewpoint by demonstrating that girls who smoked daily exceeded the boys and that males are more regular in their physical exercises than females. The fourth finding of our research, i.e., males are higher on health maintenance behavior than females, provides empirical support to the second viewpoint. At this stage we can simply say that there is a controversy regarding gender and health related behavior. More extensive research is required to resolve this controversy.

Turning our attention to other findings of the present research, we notice that first six interactional effects, i.e., interaction between health locus of control and hardiness, health locus of control and age, health locus of control and sex, hardiness and age, hardiness and sex and, age and sex are statistically insignificant. The remaining five interactional effects, i.e., interaction among health locus of control x hardiness x age; interactional effect among health locus of control x hardiness x sex; health locus of control x age x sex; hardiness x age x sex; and health locus of control x hardiness x age x sex, are statistically significant.

The first insignificant interactional effect of health locus of control and hardiness suggests that the health maintenance behavior scores of internally oriented and externally oriented subjects are independent of their levels of
hardiness. Like the first insignificant interactional effect, the remaining insignificant interactional effects, may also be explained.

So far as significant interactional effect of health locus of control, hardiness and age is concerned, it suggests that the health maintenance behavior scores of internally oriented and externally oriented subjects are not independent of their levels of hardiness and age, rather health maintenance scores of the subjects are the product of health locus of control, hardiness and age. In other words, neither health locus of control nor hardiness nor age alone influences the health maintenance behavior. Like the first significant interactional effect, the remaining four significant interactional effects may also be explained.

The overall findings of the present research showing absence of differential effect of all independent variables except one, i.e., sex, on health maintenance behavior may be interpreted in terms of the "Stage of Change Model" of health related behavior. This model which is also known as trans-theoretical model (Di-Clemente et al, 1991; Prochaska and Di-Clemente, 1984; Prochaska, Diclemente & Norcross, 1992) outlines five stages of intentional behavior change, namely (1) pre-contemplation, (2) contemplation, (3) preparation, (4) action and (5) maintenance. In the first stage, i.e., pre-contemplation stage, people do not consider changing their behavior at least during the next several months or so. They might have never thought about changing or decided against it. In the second stage, i.e., contemplation stage, people are aware of a problem existing and are seriously considering changing to a healthier behavior within the next several months. However, they are not yet ready to make a commitment to take action. In the third stage, i.e., preparation, individuals are ready to try a change and plan to pursue a behavioral goal, for example, stopping smoking in the next month. They may have tried to reach that goal in the past year without being fully successful. For instance, these people might have reduced their smoking by half, but could not
yet quit completely. In the fourth stage, i.e., action, the actual change is
effected that spans over a period of time, usually six months, from the start of
people's successful and active efforts to the change of behavior. In the fifth and
final stage, i.e., maintenance, people work to maintain the successful
behavioral changes they achieved. Although this stage can last indefinitely,
researchers often define its length as six months for follow-up assessment.

According to this model people who are currently in one stage show
different psycho-social characteristics from people in other stages. For
example, people in the pre-contemplation stage regarding an unhealthy
behavior, such as eating a high-cholesterol diet, are likely to have less self-
efficacy and see more barriers than benefits for changing that behavior than
people in the more advanced stages. Efforts of their own or of others to change
the behavior are not likely to succeed until these individuals advance through
the stages.

In the light of the findings of the present investigation it may be
assumed that all the subjects irrespective of their personality and demographic
variables, were lying in the same stage and, therefore, no difference was
obtained with respect to health maintenance behavior. Further research is,
therefore, needed in which subjects should be taken from different stages of
intentional behavior change, their personality and demographic variables be
varied, and then the impact of these personality and demographic variables on
health maintenance behavior be explored. The findings of such a proposed
research may not only resolve the controversies regarding the impact of these
variables on health maintenance behavior, but may also provide more
meaningful results.