Chapter 5. Discussion

As evidenced by the fact that over half of the homemakers entering EFNEP and SCNEP had household VCRs and telephone access, video instruction is a feasible means of delivering lessons to a substantial number of homemakers. However, the variability seen by area implies that this method of instruction may be more viable in certain locations than others. The reason that urban homemakers were less likely to have household VCRs and telephone access is unclear. However, the higher cost of living in these areas may have played a role. It may be that some unmeasured characteristic of rural households made them more likely to have a working VCR and telephone access. It is important to note that this study only monitored the household VCR status and telephone access of homemakers living in ten areas of Virginia. In addition, the calculated prevalence of household VCRs and telephone access among EFNEP and SCNEP homemakers may be inflated since study participants accounted for only a portion of the program assistant (PA) caseload during this period.

Comparison of study participants to typical Virginia EFNEP homemakers on selective characteristics indicated that the study sample was fairly representative of Virginia EFNEP participants. In fiscal year 1995, 48% of Virginia EFNEP homemakers were African American, 45% were white, and 6% were either Hispanic or Asian American. As compared to the study sample which consisted of a slightly greater percentage (57.1%) of white participants and a similar percentage of African Americans (41.9%). Representation of Hispanic and Asian American race groups in the Virginia EFNEP and the study sample (1% Hispanic and 0% Asian Americans) was low. However, this partially reflects the characteristics of the low-income population in Virginia where the majority of those living in poverty are African American (52%) and non-Hispanic whites (46%). Since only 1% of the study participants were Hispanic, they were excluded from the MANOVA that examined the effects of race on dietary intakes and behaviors. As a result, the effectiveness of video instruction remains untested for this race group.

While approximately 30% of the study participants left the study before graduation, this dropout rate falls within the 12% to 38% range reported by state EFNEP programs nationwide. It is possible that instruction type affected the attrition rate in this study. Added problems associated with VCR disrepair or loss contributed to the dropout rate for the Video Instruction Group. The issue of maintaining a functioning VCR could be problematic in the delivery of video lessons in the future, and a back-up method of instruction may be needed to complete a lesson series when a VCR stops working. However, only approximately 6% of the Video Instruction Group dropped out for this reason. Perhaps a more important observation was that almost 8% of participants receiving video instruction left the study in order to receive traditional lessons. This may reflect different learning styles or other characteristics of these participants or certain qualities of the videos themselves. Ultimately, this would not necessarily be problematic since the objective of using video or traditional instruction in EFNEP and SCNEP would be to provide the most appropriate delivery method for the needs and circumstances of the homemaker. In addition, the majority of participants that remained in the study liked
receiving video lessons. Therefore, it does not seem that overall dissatisfaction with
video instruction would result in a particularly high attrition rate. However, attrition rates
for those individuals receiving video lessons should be monitored. A larger sample may
allow for the identification of certain characteristics of the participants that leads to the
discontinuation of video lessons in favor of another form of instruction.

Interestingly, several video instruction participants left the study before
graduation because of employment. Considering the postulated application of the video
instruction method for working food stamp recipients, this finding seems to indicate that,
despite the added flexibility of the video instruction, some participants felt that they could
not balance work related demands or arrange their schedules for phone discussions or
intermittent home visits.

As reported in other studies, traditional instruction resulted in substantial
improvements in the consumption of fruits and in vitamin C, vitamin A, vitamin B_{6},
calcium, and dietary fiber intakes.\textsuperscript{21,91,94,97} Contrary to findings in some other studies,\textsuperscript{91,96-97}
no significant improvements were seen in the number of servings from the Breads,
Dairy or Meat Groups. However, the number of servings consumed from the Meat Group
was already within the recommended range at baseline. A review of recent survey data of
low-income households showed that over one-third of the food expenditures of low-
income families went towards the purchase of meat.\textsuperscript{38} Food stamp recipients, particularly
African American recipients, have been reported to emphasize the importance of meat at
an evening meal, associating it with success, status and meal satisfaction.\textsuperscript{38} Hence, low
consumption of foods from the Meat Group may not be as problematic for low income
individuals as are foods from other food groups (e.g., the Fruit, Vegetable and Milk
Groups). Although not statistically significant, there was a trend towards higher
vegetable consumption following traditional instruction. Other intervention studies with
EFNEP homemakers have found improvement in the number of servings from this food
group.\textsuperscript{91,94,96,97}

No significant change was seen in the percentage of kilocalories consumed as fat
or in the number of servings from the Fats/Sweets group. This is of concern since
participants in both groups had intakes with greater than 30\% of kilocalories as fat and
more that nineteen servings of the Fat/Sweets group at baseline. This high consumption
of fat in the diet has been seen in other studies with EFNEP participants, at program
entry, as well as in the general population.\textsuperscript{39,125} Considering the role of a high fat intake
in the development of cardiovascular disease,\textsuperscript{126,127} future education efforts may need to
include a stronger emphasis in this area. However, the lessons provided to participants in
this study did not focus exclusively on the consumption of fats and sweets. Rather, this
information was incorporated in lessons on each section of the Food Guide Pyramid.
Another lesson that is a part of the \textit{Eating Right is Basic, 3\textsuperscript{rd} edition (ERIB-3)}\textsuperscript{75}
curriculum, but was not included in this study is \textit{Eating Right and Light}. It is possible
that the incorporation of this additional lesson would have resulted in a decreased fat
intake.
The fact that the amount of improvement in dietary intakes and Behavior Checklist scores from pre to post did not differ between the Traditional and Video Instruction Groups indicates that video instruction is as effective in promoting dietary change. The comparison of relative costs of instruction delivery indicated that video instruction was less expensive than traditional instruction. PAs spent less time delivering video instruction than traditional instruction suggesting that larger caseloads may be possible with the video instruction method. Unexpectedly, the number of miles traveled was similar for both groups. It was expected that, due to the more frequent travel to the home required in traditional instruction, that the mean number of miles traveled would be significantly higher for the Traditional Instruction Group. It is possible that, despite random assignment to groups, that more participants that lived at greater distances received video instruction.

Locus of control did not have an effect on dietary intake or food behaviors, nor did it interact with the Cooking Reinforcement Value (RV). These findings are contrary to those by Houts and Warland who found internally oriented individuals to score significantly higher on a nutritious food behavior scale than externally controlled individuals. Locus of control scores were not significantly different between study dropouts and graduates. However, some weight loss studies, have shown internally oriented subjects to complete treatment more often than externals. Locus of control did not play a role in whether or not participants made dietary and food behavior changes based upon lesson type. Consequently, it does not appear that individuals that were more “internal” were more successful with the self-administered video lessons than “externals.”

Some research indicates that internally and externally oriented beliefs are not mutually exclusive and that multidimensional scales better represent reality. In fact, Houts and Warland later suggested that unidimensional scales, like the one used in this study, may be less specific, weaker instruments. In addition, it is possible that the locus of control scale used in this study was not specific enough to particular food-related behaviors to provide an accurate prediction. A locus of control scale that addressed feelings of control over one’s ability to eat healthy foods or to prepare low-fat dishes and so forth may have been more valuable. In addition, other factors such as competing RVs and/or psychological/social context may have influenced behavior outcomes.

The Cooking RV (Behavior Checklist question 20, “How do you feel about cooking?”) did not have an effect on dietary changes or food behaviors. However, a deeper analysis including the qualifiers associated with question 20 (e.g., question 21b, “It’s better for my family”) with question 20 may reveal other relationships. In fact, the true grouping of RVs for analysis should be such that individuals that “like cooking because I like to eat” are compared to those who “don’t like cooking because my family doesn’t like what I cook” and so forth. Future scoring of the Pennsylvania State Behavior Checklist may be more informative if questions 20 and 21 are not treated as separately scored items. In fact, scoring question 20 on a three-point scale and then providing one-point for any qualifier in question 21 (despite whether it is positive or negative) seems to offer little useful information. For this reason, only question 20 was used in the analysis.
of the effects of the Cooking RV on dietary intake and food behaviors. Earlier work by Houts and Warland\textsuperscript{70} showed that all positive RVs (“I like meal preparation because…”) did not necessarily have the same predictive value. For instance, they found that individuals that “liked food preparation for the sensuous pleasure of food, such as taste, smell, appearance or the variety of tastes” scored lower on a nutritious food behavior scale than individuals who “just don’t like cooking” or “dislike meal preparation because it’s boring.” As a result, it seems that simply including these items on the checklist as categories and then using this information to direct the nutrition intervention may be more appropriate. For instance, a homemaker that “doesn’t like to cook because I don’t have money for groceries” may benefit most from lessons on budgeting and meal planning as well as referrals to other federal food assistance programs. Future studies could determine if such categories have predictive value in regards to dietary change.

It is possible that having a RV specific only to cooking did not identify the homemakers’ RVs for participating in EFNEP or SCNEP or for making dietary changes. Participants may have enrolled in EFNEP or SCNEP for reasons other than learning to cook, such as being able to choose healthy foods at the grocery store for their children, budget meals to make food last longer, select lower-fat foods in order to control weight, and to learn more about food safety. It is also possible that individuals that “don’t like to cook” could still make positive dietary or food behavior changes if other RVs had a stronger influence.

In addition, RVs more specific to the changes EFNEP and SCNEP are trying to promote may be more predictive of whether change will occur. For instance, a question that inquired, “How do you feel about preparing or eating fruits,” might be more predictive of whether the individual would actually increase their number of servings from the Fruit Group than would the question “How do you feel about meal preparation.” Houts and Warland\textsuperscript{70} identified the RVs, currently a part of the Pennsylvania State Behavior Checklist, from the responses of a national sample of 458 primary food preparers that represented a wider age range and were not specifically low-income. RVs for Virginia EFNEP homemakers may be substantially different from those in other states and of different socioeconomic status and age range.

The third predictive variable in Rotter’s Social Learning Theory, situational factors (e.g., social context, psychological context), was not assessed in this study. It is possible that the participants’ home environment may have interfered with the adoption of positive dietary behaviors even when the individual was internally oriented and identified better nutrition as a RV. Several studies have noted the association between the family environment and behavior change with low-income homemakers.\textsuperscript{38,71-73}

While the viewing time (approximately five to eight minutes) of the videos fell within the acceptable range reported by Doark et al.\textsuperscript{42} for low literacy audiences, 22.2% of homemakers felt that the videos were too short. Several homemakers felt that the videos should have gone into more detail or provided more information. It is possible that the videos either did not provide enough factual content or addressed topic areas with which the participants were already familiar. This may partially account for the
perceptions of some participants that the videos were too short in length. In this study, it was required that all participants receive the same twelve lessons for comparative purposes. In EFNEP, however, the selected lessons that a homemaker receives are based on their need as determined via the Diagnostic Report and their interest in additional topics. Consequently, in a typical situation, the participant would be less likely to receive information they “already knew.” Doark et al. warn, however, that too much factual information presented at one time may overwhelm low-literacy viewers. As a result, efforts should be made to provide homemakers with lessons that address the needs and interests of the homemaker, while still focusing on a few main points. It is unlikely that simply increasing the run-time of the videos will provide any actual benefit in itself. In fact, Doark et al. has reported that low-literacy participants tend to lose interest in videos longer than eight minutes in length.

While the majority of participants enjoyed receiving video lessons, several noted that the videos were boring. Likewise, some PAs collaborated this view and stated that some participants thought the videos were dull and uninteresting. This may reflect the experience of the homemakers with other televised and videotaped programs. The acceptance of televised instruction by college students has been related to the sophistication of visual resources and the acceptance and enthusiasm of the supervising teacher. While research concerning the most suitable characteristics of videos for low income homemakers is sparse, Doark et al. has stated in her guidelines for using videos with low-income individuals that “by now we are all sophisticated TV viewers and have high standards in terms of production quality.” Such savvy viewers may expect sophistication (special effects, etc.) in information and programming provided by educational video. As a result, there is a need for educational videos that meet these standards while still retaining their basic nutrition message. Results of other studies have indicated that the presentation format of televised/videotaped instruction may affect the amount of learning that takes place. Doark et al. has also suggested that videos that employ dialogue hold the viewer’s attention better and are less boring than monologue video instructions.

The use of telephone discussions was particularly problematic as a part of the delivery of video instruction. While participants had telephone access at entry, disconnection of telephone service sometimes occurred during the course of the study. Inability to reach participants by telephone as well as the reduced face-to-face contact may have contributed to the attrition rate of the participants from the intervention.

Some type of interaction between the PA and homemaker appears to be important to the success of the intervention. Contento et al. found that active participation was important to the success of nutrition education programs including participation in setting goals, food-related activities, etc. Lack of two way communication between the instructor and learner has been identified by others as a major limitation of television/videotapes dietary instruction. Klapper concluded that viewers might learn effectively via television as long as they have some contact with the instructor. Other research has indicated that, when an individual must decide whether or not to adopt a suggested behavior, interpersonal sources of communication (especially from respected individuals
and peers) are more influential than media sources (e.g., broadcast media and print materials). Habermas states, in his theory of communicative action, that true communication requires that receivers of information be able to clarify and question what is being stated (“undistorted discourse”). Byrd-Bredbenner et al. also suggested that use of informational videotapes accompanied by “live” discussion and activities may be an effective means of providing nutrition education. It is thereby necessary that instructors are used reinforce video and television messages and facilitate the adoption of new attitudes and behavior (helping move individuals through the change process).

Some participants indicated that they wanted food demonstrations to be included in the videos. This seems appropriate since PAs usually can demonstrate certain techniques, such as measuring, when using the flip chart during traditional instruction. Such demonstrations may be more difficult for the viewer to conceptualize if presented in a still picture rather than by a “live” actor.

The fact that 63.3% of homemakers felt the videos only displayed foods they normally eat “sometimes” may indicate that the videos did not reflect regional or cultural foods. However, it could also imply that the video lessons incorporated foods from food groups not normally consumed by the participants, such as low fat selections. Therefore, the depiction of foods not normally eaten in the home may not necessarily have a negative implication, but rather may be part of the educational objective of the lesson. However, recent focus groups conducted with food stamp recipients identified that ethnic and cultural traditions strongly influence food choices and meal preparation. This was especially true for African American and Hispanic participants, who often learned to purchase and cook food from their mothers and continued to cook traditional meals for their families. More research needs to be conducted concerning the cultural and regional appropriateness of the ERIB-3 video lessons.

Analysis of the use of the question categories on the Pennsylvania State Behavior Checklist as factors revealed a low internal consistency. Consequently, these groups were deemed unsatisfactory for measuring the resource management and food safety/food preparation behaviors of the study sample. Instead, three other factors were identified in the current study using exploratory factor analyses. The extracted factors of Nutritious Meal Planning, Food Resource Budgeting, and Nutritious Food Selection/Comparison were applicable to the current study sample. However, additional factor analyses should be conducted using a larger sample size and different sections of the low-income population. Overall, the scoring of the Pennsylvania State Behavior Checklist as one factor may be most appropriate, given its high Crombach alpha of 0.72. In addition, this allows for the inclusion of items assessing other food behaviors (e.g., leaving perishable foods out of the refrigerator for more than two hours) that did not load onto the three extracted factors.