AN EVALUATION OF THREE CONSUMER EDUCATION STRATEGIES: THE CASE OF CHILDREN'S SLEEPWEAR FLAMMABILITY

BY

© DOROTHY JEAN BILLICH

A thesis presented
to the
University of Manitoba
in partial fulfillment
of the
requirements for the degree -
Master of Science
in the department
Clothing & Textiles

ISBN 0-315-51649-6

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ABSTRACT

The purpose of this thesis was to evaluate three consumer education strategies with respect to their impact on consumers' clothing flammability knowledge and consumers' preferences and purchase intentions for children's sleepwear. The educational strategies considered were a videotape produced by Consumer and Corporate Affairs Canada (CCAC), a poster presentation developed by CCAC with the Canadian Paediatric Society (CPS) and an alternative poster presentation designed by the author.

To evaluate CCAC's videotape, a convenience sample of 148 consumers was drawn and the Solomon four-group research design implemented. Assignment to pretested groups was random: assignment to experimental/control groups was determined by attendance/non-attendance at meetings where the videotape was shown. For the evaluation of the posters, the convenience sample consisted of 194 consumers who were interviewed at pediatricians' offices where the posters were alternately displayed, and static group comparisons were made. Measurements of consumers' knowledge of the flammability of children's sleepwear, their knowledge of the action children should take when their clothing catches fire, and consumers' preferences for styles of children's sleepwear as well as demographic information about the consumer were collected by means of a

questionnaire. Whether consumers had noticed and/or read the poster presentations was also recorded. Frequency distributions of consumers' responses were developed and Chi-square tests performed.

Results of the videotape experiment show that although most consumers had adequate knowledge of the action children should take when their clothing catches fire prior to treatment, their knowledge of this action improved significantly after viewing CCAC's videotape. Consumers' knowledge of the flammability of children's sleepwear and their preferences for styles of children's sleepwear did not differ significantly between treatment groups.

A detailed evaluation of the posters was not possible because so few consumers read either presentation. However, it was observed that consumers are already knowledgeable about which designs of sleepwear are most flammable, but they have little knowledge of the flammability of fibres. Consumers were found to have adequate knowledge of the action children should take when their clothing catches fire. No significant difference in the amount of consumer attention attracted by a poster was observed between the CCAC/CPS and alternative presentations.

Implications for policy decisions and suggestions for future research are discussed.

ACKNOWLEDGEMENTS

There have been many friends and mentors throughout my life who have somehow played a role in making this thesis possible. I would like to take the opportunity now to thank those who made very significant contributions during the completion of this study.

First, thank you to my advisors, Dr. Sheila Brown, Dr. Richard Stanwick and Prof. Cecilia Gonzales, for your continual guidance and support. Your willingness to share your expertise as well as your patient encouragement were greatly appreciated.

This study would not have been possible without the co-operation of the following groups: the Parents of Twins and Triplets, the St. Vital YM/YWCA Neighbourhood Drop-In, and Westworth United Church. Many thanks for your participation and a special thank you to Mrs. Trish Cavers whose interest and assistance was overwhelming.

I am equally indebted to the following pediatricians: Dr. W. D. Bowman, Dr. F. R. Friesen, Dr. G. N. Muruve, Dr. K. R. Rajani, Dr. J. Roberts, Dr. H. Taylor and Dr. Y. S. Tsai of the Manitoba Medical Clinic and Dr. K. A. Christie, Dr. A. Esquivel, Dr. R. K. Sachdeva and Dr. J. Du of the Winnipeg Medical Clinic, for allowing me to conduct my

interviews in their departments. Thank you also to their nurses and receptionists.

To my fellow graduate students, thank you for all the soothing and very beneficial "grad room chit chat". In particular, I am indebted to Cecile Clayton-Guthro for her tremendous artistic input, and to Laurel Prendergast-Shea for her friendship.

I would also like to thank my family for their continual encouragement and support - both moral and nutritional. It was greatly appreciated. Thank you especially to my parents, Donald and Eleanor Marshall, for teaching me that, in the long run, hard, honest work always pays off, even though at times, the run may seem very long. A special thanks also to my grandmother, Flora Marshall, for teaching me how to use my hands in so many ways and, above all, the joy of creativity.

And last, but certainly not least, thank you to my husband, Ian Billich, for always being there to provide perspective and for gently but firmly nudging me along without ever pushing.

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CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

The purpose of this thesis was to conduct a preliminary evaluation of the effectiveness of three consumer educational strategies designed to educate parents and children about the flammability of children's sleepwear and about how to reduce the risk of clothing burn injuries.

Excluding automobile accidents, the leading cause of death in children aged one to four years and the second most common cause for those five to fourteen years of age, is fire and burn injuries (White, 1971). Injuries sustained from the ignition and burning of clothing are among the most severe. In Canada, approximately thiry-seven children aged nine or less are admitted annually to tertiary care centres for the treatment of clothing burns (Stanwick, 1985). This statistic does not consider those children who die in hospital as a result of clothing burns before they can be transferred to a tertiary care centre, or before they even reach a hospital. It also excludes those children whose injuries were not severe enough to warrant such a transfer. Another estimate is that forty-five children are admitted to hospital for clothing burns

in Canada per year (Hall, 1984). Both of these estimates exclude cases involving house fires, explosions, and clothing contaminated with flammable substances.

Stanwick (1985), through step-wise mulitple regression analysis, found the most powerful predictor of burn severity to be the looseness or flowingness of the clothing involved ($p \leq 0.001$). The only other significant factor was the ignition situation: the child's deliberate avoidance of parental supervision in order to pursue a dangerous activity ($p \leq 0.01$). Other factors considered by Stanwick included the child's age, sex and the type of clothing involved: daywear or sleepwear.

Of all the children admitted annually to tertiary care centres for clothing burns, over 55% of the cases involve sleepwear. Not only are sleepwear garments generally more loose-fitting and flowing in design, but children are less likely to be under close parental supervision at night and in the early morning (Hall, 1984).

In order to reduce the risk of clothing burns to children, medical professionals, home economists, the Consumers' Association of Canada, the Canadian Institute of Child Health, women's groups, and others lobbied for several years for improvements to the legislation governing the flammability of fabrics used in children's sleepwear.

Like most textile products, sleepwear has been regulated under the Hazardous Products Act since 1971.

In June 1986, the Canadian government announced the introduction of more stringent standards similar to those in the U.S.A., regulating the flammability of fabrics used in children's sleepwear. Nightgowns, robes, baby-doll and tailored pyjamas up to size 14X are regulated by these new requirements. Since polo or ski pyjamas and sleepers do not pose as great a fire hazard because of their snugness-of-fit, they continue to be regulated under the previous, less stringent regulations, but these regulations have been extended to cover polo pyjamas and sleepers from size 6X to size 14X as well. Infant sleepwear for children weighing up to seven kilograms is also subject only to the previous legislation as this sleepwear is rarely cited in burn accidents. Implementation of the legislation was delayed, however, until September 1987 to allow clothing manufacturers time to adjust to the new requirements (Fletcher & Stevenson, 1986).

Although this legislation will reduce the risk of clothing burns in children, it will not eliminate the hazard entirely. All fabrics used in sleepwear will ignite and burn. The new standards only eliminate from use in sleepwear garments those fabrics which ignite easily and burn quickly.

Wall and Gallagher (1983) discovered that the majority of Canadian consumers are unaware of the possible fire hazards of sleepwear, and of existing Canadian flammabilty legislation for children's sleepwear. In addition, some consumers may be wary of flame retardant garments because of the 1976-77 Tris controversy (Avery, 1982). Tris (2,3-dibromopropyl) phosphate, a chemical flame retardant, which was widely used in sleepwear in the United States, was purported to be a skin irritant, a mutagen, and a potential carcinogen (Blum & Ames, 1977; Crikelair, 1980; Harris, 1976). In order to avoid any perceived potential health hazards of chemical additives and treatments, consumers may chose to buy non-sleepwear items, to home-sew nightwear from inappropriate fabric, or to use hand-me-downs (Armstrong, 1977; Bolger, 1978).

These factors indicate a strong need for an effective educational program in conjunction with the new legislation. Consumer and Corporate Affairs Canada (CCAC) has launched a $178,000 campaign to educate parents and children about the new flammability regulations and the fire hazards associated with children's sleepwear. Strategies included in the CCAC educational program are a videotape presentation, public service radio announcements poster presentations on display in pediatricians' offices and press information packages ("Safer Sleepwear Set", 1986).

Consumer education programs have been demonstrated to influence consumers (Bloom & Ford, 1979; Crosby & Taylor, 1981; Crown & Brown, 1983; Reid & Preusser, 1983). Their influence, however, has been observed to be greater on consumers' cognitive structures, "which refer to their knowledge, opinions, beliefs and thoughts about an object" (Fishbein and Ajzen, 1975, p.12), than on consumers' affective or conative structures (Bloom & Ford, 1979; Crosby & Taylor, 1981; Crown & Brown, 1983; Reid & Preusser, 1983). Affective structures refer to the consumer's "feelings toward and evaluation of some object, issue or event" (Fishbein & Ajzen, 1975, p.12) while conative structures entail their "behavioural intentions and actions with respect to or in the presence of the object" (Fishbein & Ajzen, 1975, p.12). This differential influence is perhaps attributable to the limited time frame allowed by experimental situations which may permit only partial progression of the information through the hierarchy of effects. The notion of a hierarchy of effects suggests that changes must occur at the cognitive level before they can occur at the affective level, and that affective changes must precede conative changes (Day, 1976). It may, however, be a result of the inadequacies of the educational program.

The impact of consumer education programs has been observed to vary according to the media used, audio-visual

strategies exhibiting significantly greater impact than print media strategies (Crown & Brown, 1983; Winett & Kagel, 1984). Increasing the number of strategies used in conjunction with each other has also been demonstrated to increase a consumer education program's impact (Reid & Preusser, 1983; Winett & Kagel, 1984).

Research investigating the influence and the effectiveness, in terms of specific program goals, of consumer education strategies is necessary for two main reasons. First, it helps ensure cost efficiency. Second, it helps to further our understanding of consumer behaviour, and the potential of educational strategies to modify consumer behaviour. Findings from this type of research will lead to the refinement of consumer education programs. Within the context of this study, the more successful the education strategies are, the safer the environment will be for children. In more general terms, the refinement of consumer education programs will provide diverse benefits to all consumers. Results of research evaluating the impact of consumer education programs will also assist public policy makers in their decisions about consumer protection by providing them with guidelines as to the applicability and limitations of educational versus regulatory strategies.

1.2 OBJECTIVES

Since CCAC's education program had been recently developed and had not yet been widely implemented, it was timely to conduct an evaluation of its impact. Two of CCAC's strategies were considered: CCAC's videotape and their poster presentation which was produced in conjunction with the Canadian Paediatric Society (CPS). A third strategy, an alternative poster presentation designed by the author, was also included.

The objectives of this research were to evaluate these three educational strategies with respect to their impact on:

1. consumers' clothing flammability knowledge and,
2. consumers' preferences and purchase intentions for children's sleepwear.

CHAPTER 2

REVIEW OF LITERATURE

2.1 INTRODUCTION

The following literature review is intended to provide background information, a context and a justification for this study's methodology as well as for the interpretation of results. First, a definition of consumer education will be provided, followed by an overview of the model of consumer behaviour which formed the theoretical basis of this research. Significant related research which provided guidelines and insight for the present study will then be discussed.

2.2 DEFINITION OF CONSUMER EDUCATION

Willet (1979) defines consumer education as

> "an area of study which equips individuals and groups with the knowledge and skills to make effective choices and take action regarding the use and conservation of available resources in the public and private sectors consistent with individual values and societal needs."

As such consumer education is not a means of persuading consumers to buy certain products, brands or models in preference to others, but rather a method of heightening consumers' awareness of the numerous economic and non-economic considerations involved in a purchase decision.

The goals of consumer education include not only the enhancement of knowledge, but also the consideration and development of personal values, and the improvement of decision-making or evaluation skills (Charters, 1973; Prager, 1978). In terms of these goals, the educational strategies considered in this study aim to increase the consumer's knowledge of the flammability of children's sleepwear and how to reduce the risk of burn injury; to increase the value consumers attach to fire safety thus increasing the likelihood of their considering flammability when choosing children's sleepwear; and to teach consumers how to assess a garment's flammability properties when comparing alternative garments.

2.3 THEORETICAL FRAMEWORK OF CONSUMER BEHAVIOUR

According to Sternthal and Craig (1982),

> "Consumer behavior is the study of the process by which consumers make decisions. More specifically it is concerned with how consumers acquire, organize and use information to make consumption choices" (pp. 6-7).

This study examines the extent to which consumers acquire information about the flammability of children's sleepwear and burn injury prevention as presented by the three consumer educational strategies, as well as the extent to which this information is internalized and used in the development of preferences for children's sleepwear

garments.

The Engel-Black-Miniard (1986) Complete Decision Process Model (EBM model) has been chosen to provide the theoretical framework of consumer behaviour for this study because it is one of the most widely accepted models within the fields of marketing and consumer behaviour [see Figure 1]. Further, its explicit delineation permits the identification and isolation of relevant components of consumer behaviour, thus facilitating discussion.

The EBM model consists of four components: input, information processing, the decision process and variables influencing the decision process. These components will now be very briefly described in order to provide an overview of the model.

The input component of the EBM model consists of all the stimuli or information directed towards the consumer. The information processing component outlines a series of stages through which such stimuli must pass in order to be retained in the consumer's long-term memory. Once stored in long-term memory, the information may be recalled and used in a purchase decision. It may, in fact, even initiate the decision process. The stages included in the information processing component are exposure, attention, comprehension/perception, yielding/acceptance, retention

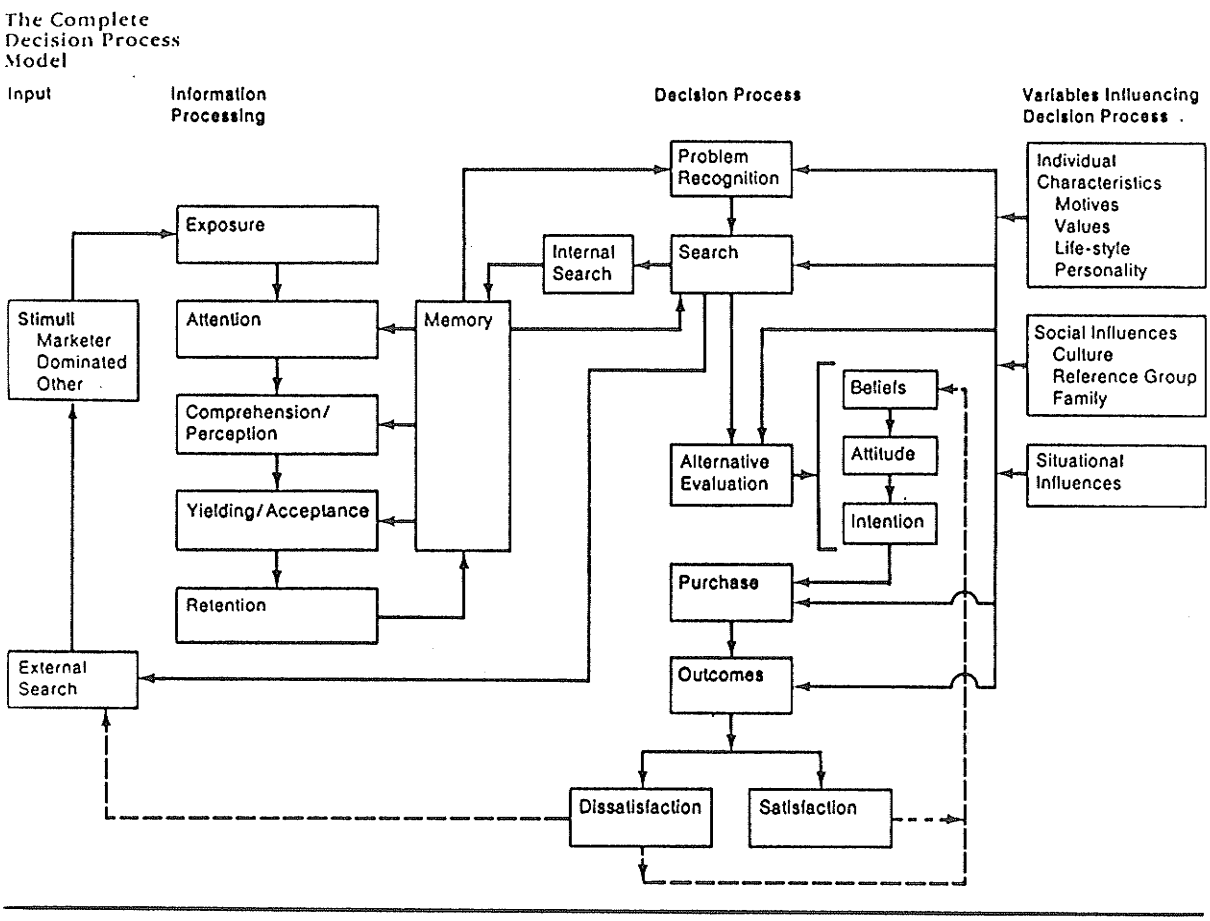


FIGURE 1

Source: Consumer Behavior (5th Ed.) (p. 35)
by J. F. Engel, R. D. Blackwell, & P. W. Miniard
1986, Chicago: The Dryden Press

and memory.

The decision process component forms the core of the EBM model, comprising a series of phases through which the consumer passes, leading up to and including the actual purchase as well as the outcomes which result from the purchase. Although consumer decision making is rational, it is not optimal in the classic sense of the word. Because consumers have limited information processing capacity and imperfect predictive abilities, they are unable to carry out the mental processes necessary for optimization; that is, realizing and predicting as well as evaluating the complex of consequences associated with each and every possible alternative (Simon, 1976, p. 80). Thus, consumers approximate optimization by choosing products that will suffice given their needs and wants (Simon, 1955, pp. 100-101). The degree to which consumers simplify the process and hence use satisficing over optimizing criteria varies from purchase to purchase and across individuals according to the traits and the abilities of the individual consumer, the characteristics of the marketplace and the product class in question. One concept that has been developed to explain the variance in complexity of the consumer choice process is involvement.

Antil (1984) defines involvement to be "the level of perceived importance and/or interest evoked by a stimulus (or stimuli) within a specific situation" (p. 204).

Importance or interest will be high when the consumer perceives the product as reflecting his/her self-image, when he/she perceives the risks associated with a wrong decision to be high, or when the consumer perceives social normative pressures to be strong (Engel et al., 1986, p. 24).

When involvement is high, the consumer will engage in extended problem solving activity. This is characterized by the active search for and use of information, the consideration of many alternatives and/or attributes, and the development of beliefs, attitudes and intentions regarding the alternatives involved before the actual purchase. In situations where involvement is not so high, only limited problem solving will be carried out entailing less extensive search and alternative evaluation activities.

In the case of children's sleepwear, involvement is likely to be moderate. Clothing is generally perceived to reflect strongly one's self-image thus implying high involvement. With children's wear, not only is the child's self-image in question, but also the parents' since adults often believe that their child's appearance reflects on their social status. Children's sleepwear, however, is not worn in public and is therefore not as important in reflecting self-image as other types of clothing. Nor is

its cost high. But, since the child's comfort, preferences and safety, as well as the consumer's own desires for easy care, durability, and appropriate price are involved, there exists some risk of a wrong decision. Further, some social normative pressures concerning proper parenting may come into play. As a result, at least limited problem solving will be carried out during the purchase decision of children's sleepwear, involving some search and alternative evaluation activities.

The phases of the decision process will now be described. It is important to note that these phases are not mutually exclusive and actual consumer behaviour does not follow such a linear progresion as this component depicts, but rather a more random yet purposeful pattern involving backtracking and the ommission of phases. Further, the process in general may last anywhere from a few moments to several years.

The decision process is intitiated by probelm recognition which triggers the search for information. Internal search, during which the consumer searches through his/her memory for any relevant data, is activated first. If this proves insufficient, then external search is intitiated which entails the acquisition of information from sources other than memory (Bettman, 1979, p. 110). "It represents a motivated and completely voluntary

decision to seek out new information" (Engel et al., 1986, p. 68).

When the consumer is satisfied with the amount and quality of information gathered, he/she becomes involved in alternative evaluation. This phase of the decision process comprises four elements: the establishment of evaluative criteria and the formation of beliefs, attitudes and intentions toward the alternatives considered. Information collected during the search phase is used to develop the evaluative criteria and forms the basis of the consumer's beliefs toward the various alternatives. Hence, search and alternative evaluation activities are likely to be carried out concurrently.

Next is the actual purchase of the product, which may or may not coincide with the intentions developed during alternative evaluation. Numerous situational variables such as price changes, out-of-stock situations and exposure to further information may intervene (Engel et al., 1986).

The experiences which result from the purchase including, for instance, the product's performance and the selling firm's post-purchase service, are defined as outcomes. The consumer interprets and attaches meaning to these outcomes in light of his/her present situation and stores this information in memory. Satisfaction with the

outcomes will provide positive reinforcement for the purchase and increase the likelihood of its being repeated. Dissatisfaction, however, will likely induce the consumer to modify his/her purchase decison in the future.

The decision process variables component comprises three categories of variables: individual characteristics, such as motives, values, lifestyle and personality; social influences, including one's culture, family and reference groups; and situational variables, such as the consumer's demographic and emotional circumstances, characteristics of the marketplace, current events and time pressures. These variables exert influence during every phase of the decision process. Not only do they help to determine the end results of the decision process, that is the consumer's intentions, the actual purchase and outcomes of the purchase, but they also control the complexity and length of the decision process itself.

The objectives of the present study are to evaluate three consumer education strategies in terms of their effectiveness in increasing consumers' knowledge of children's sleepwear flammability, the prevention of clothing burn injuries, and in altering consumers' preferences for children's sleepwear. As such, three facets of consumer behaviour are of particular interest: how consumers encounter information like that which is

presented by the three educational strategies in question, how they process such information and how consumers internalize information, incorporating it into their purchase decisions. These three facets are represented by the information processing component and the two phases search and alternative evaluation within the decision process component of the EBM model respectively. These components and subcomponents will now be expanded upon, incorporating conceptualizations and findings of other authors where appropriate.

2.3.1 Information Processing

The information processing component of the EBM model depicts a series of mental processes that the consumer performs when receiving, organizing and storing information in long-term memory. These phases include exposure, attention, comprehension/perception, yielding/acceptance, retention and memory.

Exposure to a stimulus, such as a consumer education strategy, is the first phase in the information processing component. Exposure to the strategy activates one or more of the consumer's five senses, thus initiating preliminary information processing within sensory memory. Exposure may be voluntary or involuntary (Engel & Blackwell, 1982).

Attention is defined to be the allocation of information processing capacity within short-term memory (Engel & Blackwell, 1982, p. 30). Since the human's capacity to process information in short-term memory is limited, consumers' attention is selective. It is attracted and/or maintained as a result of the consumer's dispositions and/or current needs or because of intrinsic characteristics of the stimulus. Characteristics of the educational strategies which may help to attract attention include novelty, extremity, negativity, and physical salience. Brightness, contrast, movement, and prominence within the field of vision are examples of physical salience (Lynch & Srull, 1982; Taylor & Fiske, 1978).

Further processing of the educational strategy, during which its message is interpreted, is referred to as comprehension or perception. Comprehension is affected by the consumer's previous knowledge as well as by the context of his/her situation. Hence, meaning is not inherent in a stimulus.

Once the educational strategy's message has been comprehended, it must be found to be compatible with existing knowledge. If so, yielding and acceptance take place. The message may alter existing information and knowledge, but if it is perceived to be too incompatible with respect to this existing knowledge, then it will not

pass through the yielding/acceptance phase and thus will be rejected. Repeated exposure to an incompatible message may lead to its eventual acceptance as repitition may increase the consumer's familiarity with the message and/or may increase the consumer's perception of its credibility (Sternthal & Craig, 1982).

After yielding and acceptance, retention occurs. During this phase, the information is further processed leading to its transfer to long-term memory. The memory component, which consists of all the information stored in long-term memory, serves as a liaison between the input and information processing components of the model and the decision process.

Information stored in long-term memory may affect the decision process in several ways: it may trigger problem recognition and intitiate the decision process; it controls the complexity of the process by determining whether external search will be carried out; and the information stored in memory is drawn upon for the establishment of evaluative criteria and beliefs thus influencing the alternative evaluation phase.

The concept of information processing is closely related to the phenomenon of learning. According to Prager (1978), "learning is the changing or modifying of behavior

or perception as a result of experience" (p. 8).

Britt (1978) distinguishes between two types of learning: "intentional learning which occurs when an individual is set or 'intent' to learn" and incidental learning which "involves all other learning that occurs without the intention of the individual" (p. 202). Britt's intentional and incidental learning correspond to Engel and Blackwell's (1982) voluntary and involuntary exposure.

Wilson, Robek and Michael (1974) have identified three levels of learning: association, conceptualization and creative or self-directed learning. The first level of learning, association, involves the accumulation of bits of experience, information or awareness to existing knowledge or sensitiveness. Conceptualization, or second level learning, is conceived as the process of understanding the inherent relationships between association systems. Creative or self-directed learning, the final level of learning, results from the fusion of motivational and cognitive structures. It manifests itself as purposeful activity (pp. 32-33).

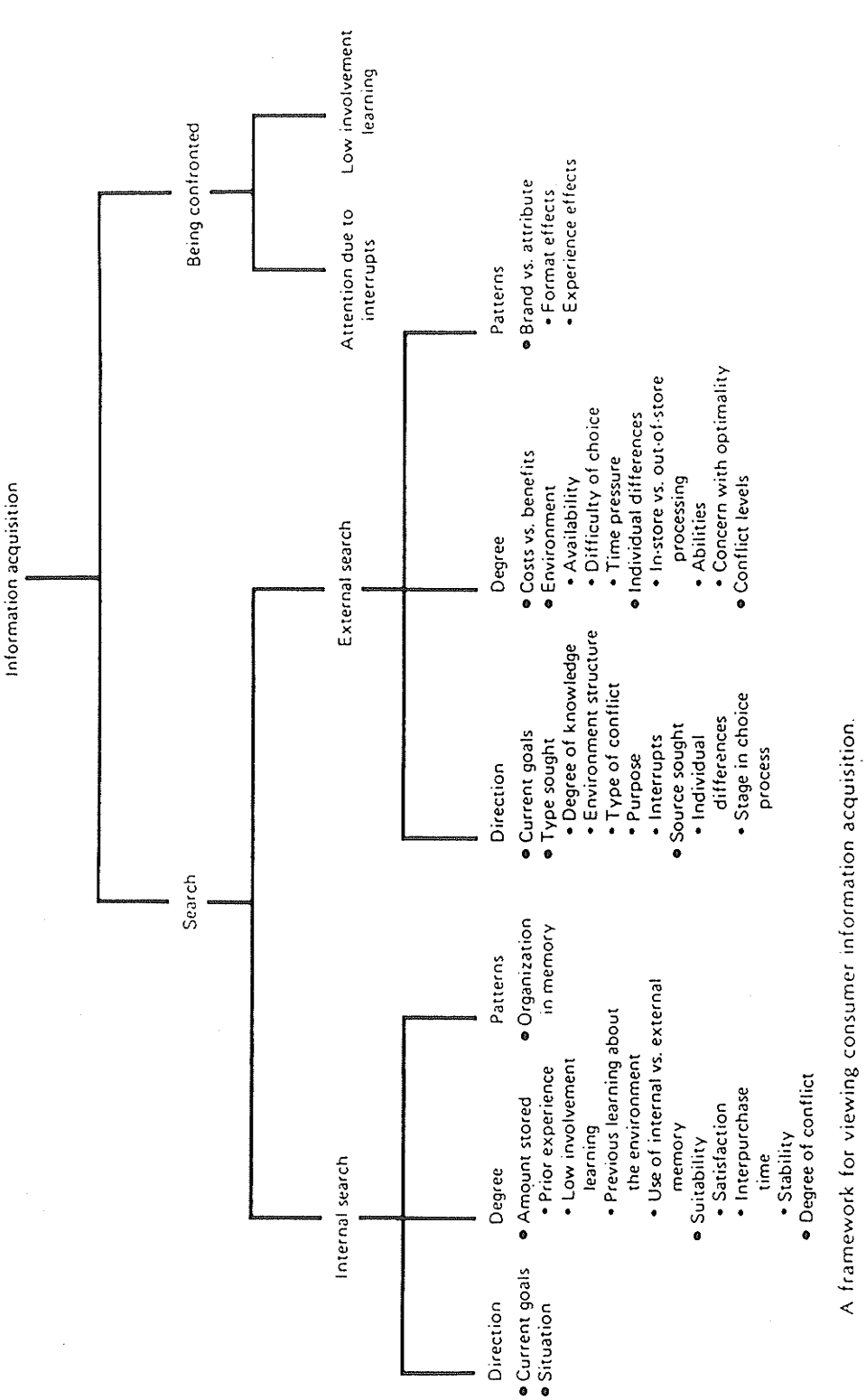
The first two levels of learning, association and conceptualization, take place during the stages of the information processing component of the EBM model. Creative or self-directed learning occurs during the

decision process component within the alternative evaluation phase. The consumer internalizes the information learned through association and conceptualization and incorporates it into his/her own purchase decision.

2.3.2 Search

The consumer's act of collecting information is represented by the search phase of the EBM model. A more explicit and encompassing representation, however, is provided by Bettman's (1979) "Framework for Viewing Consumer Information Acquisition" [see Figure 2]. Bettman's (1979) framework comprises two components: search and being confronted which correspond to Engel and Blackwell's (1982) voluntary and involuntary exposure, as well as Britt's (1978) intentional and incidental learning.

The search component parallels that of the EBM model, consisting of internal and external search. An internal search through the consumer's memory is triggered first. The extent of this internal search depends on the amount of information stored in memory, its perceived suitability for the current purchase decision (Bettman, 1979, p.110), and "its accessibility which is influenced by both encoding and retrieval patterns" (Biehal & Chakravarti, 1983, p.1).



A framework for viewing consumer information acquisition.

FIGURE 2

Source: An Information Processing Theory of Consumer Choice (p. 109), by J. R. Bettman, 1979, Reading, MA: Addison-Wesley Publishing Compay

The amount of information stored in memory depends on the amount of prior learning. The perceived suitability of the information is a function of the consumer's satisfaction with the outcomes of past purchases of children's sleepwear, the time which has elapsed since the the prior purchase, changes in the mix of available alternatives (Engel et al., 1986, p. 67) and the consumer's perception of the information's credibility (Sternthal & Craig, 1982). Factors which increase attention to stimuli and encourage greater elaboration of stimulus elements during encoding increase the information's accessibility from memory and thus facilitate interal search (Biehal & Chakravarti, 1983, p. 1). The retrieval of information from memory has been demonstrated to be cue-dependent (Tulving & Pearlstone, 1966; Tulving & Psotka, 1971). According to the "encoding specificity principle" (Tulving & Thomson, 1973), the more similar cues for retrieval are to those which surround encoding, the more successful retrieval will be.

If information retrieved during internal search is deemed to be insufficient, external search is initiated. The amount of external search carried out depends on the trade-offs an individual consumer is willing to make between the perceived costs and benefits of further information. When involvement is high or the consumer's confidence in his/her decision-making ability is low, the

perceived value of seeking information will increase. External search will continue only until perceived costs, for example parking fees, gas, mileage costs, time, effort, frustration and annoyance, outweigh the perceived benefits, such as increased satisfaction and confidence in the purchase, or until a situational influence intervenes.

The being confronted component of Bettman's (1979) "Framework for Viewing Consumer Information Acquistion" is made up of two categories: attention due to interrupts and low-involvement learning. It is through this component that consumers acquire information not directly related to their current goals and/or activities, thus engaging in incidental learning. For example, consumers may be exposed to consumer education strategies while involved in a broad range of activities like watching television, listening to the radio or passing an educational poster on display.

The being confronted component assumes that the consumer, while engaging in goal-directed activity, has the ability to devote a certain portion of his/her information processing capacity to continuously monitoring environmental conditions, and to noticing when environmental conditions necessitate a change in behaviour (Simon, 1967, p. 34). Bettman proposes that the consumer possesses two mechanisms which facilitate these phenomena: a scanner mechanism and an interrupt mechanism. Interrupts

result from conflicts which occur when the consumer encounters competing and incompatible response tendencies, from novel or unexpected stimuli, from physiological needs or from cognitive events (Bettmen, 1979, pp. 26 & 55).

Low-involvement learning, as first discussed by Krugman (1965), entails the learning about one's surroundings which occurs with minimal conscious effort. Involvement, in this context, does not refer to the level of "attention, interest or excitement but the number of conscious 'bridging experiences', connections or personal references per minute that a viewer makes between his [her] own life and the stimulus" (Krugman, 1965, p. 355). Krugman (1965) argues that when involvement is low, perceptual defence or the screening out of stimuli deemed to be incompatible with existing knowledge is reduced. The information is therefore transferred to long-term memory without causing any immediate reorganization or modification of beliefs or attitudes. The purchase decision, during which involvement as described in this context would be high, may later serve as a catalyst, calling up all these disjointed bits of information and associations learned under the conditions of low-involvement, necessitating their integration, and thus causing a delayed restructuring of beliefs and/or attitudes.

2.3.3 Alternative Evaluation

Once satisfied with the amount and quality of information collected, the consumer engages in alternative evaluation. This includes the development of evaluative criteria, and the formation of beliefs, attitudes and intentions about alternative product choices, such as sleepwear.

From the information obtained during the search, evaluative criteria are established. Engel and Blackwell (1982) define evaluative criteria to be the desired outcomes from the purchase of a good or service usually expressed in terms of preferred product attributes (p. 414). They serve as the standards and specifications against which the alternatives are judged. Examples in the case of children's sleepwear might include easy care requirements, low price, the child's comfort or low flammability.

Generally six or fewer criteria are used during the decision process (Engel et al., 1986, p. 96) though Fishbein and Ajzen (1975) suggest the number considered may be as high as nine. The criteria considered vary in salience which "refers to the potential influence each criteria may exert during the comparison process" (Engel et al., 1986, p. 96). Some attributes, though salient, may

not influence the evaluation process. Such would be the case if all alternatives measured up equally against a criterion. Those attributes which do exert influence on the evaluation process because they are both salient and important are determinant attributes (Alpert, 1971).

From the information stored in long-term memory, consumers form beliefs regarding alternatives. Fishbein and Ajzen (1975) define belief as "the subjective probability of a relationship between the object of the belief and some other object, value, concept or attribute" (p. 331). In the context of consumer behaviour, beliefs are subjective perceptions of how alternatives will perform in terms of the salient evaluative criteria (Engel et al., 1986, p. 104). For example, 'sleepwear alternative A is flame retardant' or 'sleepwear alternative B is not easy to care for'.

Beliefs may be retrieved from memory or developed during external search. They may be formed as a result of direct experience, from information provided by an outside source or they may be formulated on the basis of existing information through an inferential process (Fishbein & Ajzen, 1975, pp.132-133). Beliefs may be modified by external influences such as new information or a change in one's personal circumstances. They may also be forgotten.

The consumer's beliefs form the basis of his/her attitudes toward the alternatives. "An attitude is a learned predisposition to respond in a consistently favorable or unfavorable manner with respect to a given object" (Fishbein & Ajzen, 1975, p. 5). It is not necessarily dependent on any single belief, but rather one's overall set of salient beliefs about the object at a given time. In more simple terms, an attitude may be described as the overall evaluation for or against a specific sleepwear garment in view of all the attributes considered (Engel & Blackwell, 1982, p. 28).

Beliefs and attitudes affect the formation of behavioural intentions. According to Fishbein and Ajzen (1975), an intention is "a person's location on a subjective probability dimension involving a relation between himself [herself] and some action" (p. 228). Intentions are determined by two factors: the consumer's attitudes toward the behaviour and his/her subjective norm concerning that behaviour. A consumer's subjective norm refers to the totality of his/her normative beliefs and corresponding motivation to comply (Fishbein & Ajzen, 1975, p. 16). In more specific terms, an intention is the subjective probability that a particular alternative will or will not be purchased (Engel & Blackwell, 1982, p. 28).

Implicit in the EBM model is the notion of a hierarchy

of effects. Numerous researchers who have investigated the effects of such consumer stimuli as advertising, consumer information and consumer education programs, have discovered a hierarchical ordering of effects (Britt, 1978; Day, 1976). Research findings indicate that cognitive changes must precede, but do not necessarily ensure, subsequent affective changes which, in turn, must precede any behavioural or conative change.

The Lavidge and Steiner (1961) 'Model for Predictive Measurements of Advertising Effectiveness' [see Figure 3] consists of the following ordered steps: awareness, knowledge, liking, preference, conviction and purchase. This model illustrates that a consumer must first become aware of the information, and then comprehend it (cognitive level). Once the information is stored within the consumer's memory, he/she must develop a positive attitude towards it (affective level), and form an intention to use it during the decision process before he/she will actually incorporate it in his/her purchase behaviour (conative level).

The phases included in the information processing component of the EBM model coincide with the first level of the hierarchy of effects: cognition. The subsequent levels of the hierarchy, the affective and conative levels are incorporated within the decision process component during

Lavidge and Steiner Model.

Related behavioral dimensions	*Movement toward purchase*	*Examples of types of promotion or advertising relevant to various steps*	*Examples of research approaches related to steps of greatest applicability*
	PURCHASE	Point-of-purchase Retail store ads Deals	Market or sales tests Split-run tests
CONATIVE —the realm of motives. Ads stimulate or direct desires.	CONVICTION	"Last-chance" offers Price appeals	Intention to purchase Projective techniques
	PREFERENCE		Rank order of preference for brands
AFFECTIVE —the realm of emotions. Ads change attitudes and feelings.	LIKING	Competitive ads Argumentative copy "Image" ads Status, glamor appeals	Rating scales Image measurements, including check lists and semantic differentials Projective techniques
	KNOWLEDGE	Announcements Descriptive copy	Information questions
COGNITIVE —the realm of thoughts. Ads provide information and facts.	AWARENESS	Classified ads Slogans Jingles Sky writing Teaser campaigns	Play-back analyses Brand awareness surveys Aided recall

FIGURE 3

Source: Psychological Principles of Marketing and Consumer Behavior (p. 28), by S. H. Britt, 1978, Lexington MA: Lexington books

the phases of alternative evaluation and purchase respectively.

Although theorists generally agree that, in a given situation, an individual's overall cognitive, affective and conative structures are consistent with each other, there is much debate as to the exact causal relationship between consumers' knowledge, attitudes and behaviour (Edwards et al., 1985; Foxall, 1984). The ordering of and direction of influence among these three structures is not yet fully understood. Hence it is unknown which of knowledge, attitudes or behaviour can and should be modified first in order to maximize program effectiveness. For example, is it best to improve consumers' knowledge in the hopes that their attitudes will then be modified and their behaviour changed because of their increased knowledge, or should a program aim to modify consumers' attitudes so they become more receptive to new information, increase their knowledge and then change behaviour? Or, can consumers' behaviour only be changed through mandatory regulations, thus relying on the change in behaviour to lead to the modification of attitudes and the improvement of knowledge?

2.4 RELATED RESEARCH

Two areas of research are of particular relevance to the present study: research investigating consumers'

current knowledge and attitudes concerning the flammability of textile products and government regulation thereof, and research evaluating the effectiveness and/or impact of consumer education programs. Previous research in these two areas will now be discussed.

2.4.1 Consumer Knowledge & Attitudes Toward the Flammablity of Textile Products and Government Regulation Thereof

Several studies have investigated consumers' attitudes toward the flammability of textile products including both household textile and apparel items (Brown & Crown, 1983; Crown & Brown, 1981; Kelley, et al., 1980; Wall & Gallagher, 1983). Generally these studies have indicated that consumers, when asked directly, agree that flame retardancy of household textile and apparel items, especially when children, elderly or handicapped persons are involved, is important and/or desirable. Under conditions of free elicitation, however, flame retardancy is rarely mentioned as an important criterion for choosing textile products. This is in part, attributable to the fact that many consumers do not believe themselves to be at risk either because of other precautions, such as the installation of smoke detectors, belonging to a non-smoking household, or the absence of an open fireplace in their home, or because because they are unaware of any existing fire risks

associated with textile products. Further, some consumers believe that the flammability of textile products, especially household textile items, is regulated. They believe, not only that mandatory standards exist, when in fact they may or may not, but also that these standards are stringent enough to ensure adequate safety and that manufacturers regularly test their products to ensure compliance with these standards (Brown & Crown, 1983). This lack of explicit concern for flame retardancy coincides with Staelin and Weinstein's (1974) findings that consumers are generally more concerned with the price, quality, reliability and durability of a product than with its safety features.

Although the majority of consumers contacted in these studies agreed with government regulation of the flammability of textile products, they did so guardedly. Many were unwilling to accept the possible or perceived consequences of mandatory regulations, such as higher prices, lower durability, loss of softness or increased difficulty of care. Further, especially in the case of apparel items, consumers felt that regulation should apply only to high risk categories of children's wear, clothing for the elderly and clothing for the handicapped (Kelley et al., 1980).

Kelley et al. (1980) examined consumers' priorities

with respect to flame retardancy for a number of different types of clothing (sleepwear, casual wear, dressy wear. underwear and outer wraps) designed for a number of distinct age/sex groups (children 1 - 5 years, females 6 - 12, males 6 - 12, teenagers, adults, elderly). The consumers' priority for flame retardancy in each category was substantially lower when probable trade-offs were introduced than when flame retardancy was considered on its own. Consumers' willingness to accept trade-offs in return for increased fire safety was highest for sleepwear and underwear, particularly for children under twelve and the elderly. The consumers were much more willing to forego the aesthetic characteristics of durable bright colours, ornamentation and design lines in return for flame retardancy than performance qualities such as durability, odouressness, softness of hand, comfort, ease of care and shrinkage or stretch control. These findings suggest that consumers would respond more favourably to the introduction of mandatory flammability standards for textiles used in sleepwear and underwear than they would for other types of clothing. However, since the majority of consumers were unwilling to trade off performance characteristics for flame retardancy, such mandatory regulations may meet with resistance.

Wall and Gallagher's (1983) investigation of Canadian consumers' awareness of, knowledge about and attitudes

toward children's flame retardant sleepwear and related issues revealed that though consumers were generally in favour of government regulation to improve product safety, respondents considered public education more important than mandatory regulation in reducing clothing fire accidents. In general, consumers respond favourably toward flame retardancy of textile items and most stated that all children's sleepwear should be made to resist burning (56.9/52.2% of English/French respondents). Though willing to accept certain changes in sleepwear criteria, such as styling changes and loss of decorative trim in return for increased fire safety, consumers were not willing to accept special care instructions, loss of fabric softness nor price increases of $2 or more per sleepwear item. The majority of consumers were found to be unaware of existing Canadian flammability legislation for children's sleepwear. Only 6.3% of the English-speaking sample and 1.5% of the French-speaking sample correctly named the appropriate legislation when asked to name any Canadian laws which prevent the sale of dangerous textiles. When asked to select from a list which textile items were regulated with respect to flammability, only 40% of the English respondents chose children's sleepwear. Many consumers could not correctly define flammability terms and much confusion arose with the terms inflammable, flame retardant (agent ignifuge) and flame resistant (retard a l'inflammation).

The most disturbing finding of this study was that the majority of Canadian consumers are unaware of the possible fire hazards of sleepwear garments. Two measures of awareness were taken: an open-ended question asking respondents to list any dangers presented by children's sleepwear and, later, a direct question asking if the consumer thought sleepwear presented any danger of burn injury and, if so, to what degree. Consumers were classified as 'not aware' if they failed to acknowledge the possible fire hazards of children's sleepwear on both questions, 'partially aware' if they agreed that sleepwear posed a threat of burn injury on the second question, and 'fully aware' if they reported burn injury as a potential hazard of sleepwear during both questions. Only 15% of the English and 0.7% of French consumers were 'fully aware' while 50% of English and 75% of French consumers were 'not aware'. The danger of this lack of awareness is further increased by the current usage patterns Wall and Gallagher (1983) identified. The sleepwear garments most frequently worn, as reported by their sample, were regular tailored pyjamas and long or short nightgowns made of cotton/polyester blends for the summer months and 100% cotton (usually flannelette) for the winter months. All of these garments pose a medium to high flammability risk.

The results of these studies (Brown & Crown, 1983; Crown & Brown, 1981; Kelley et al., 1980; Wall & Gallagher,

1983) strongly indicate the need for an effective consumer education program in conjunction with the new flammability standards for children's sleepwear. Awareness of the potential fire hazards of children's sleepwear must be heightened as a first step in reducing the incidence of burn injury as well as to communicate the seriousness of the problem. Once consumers realize the seriousness of the situation, they will be much more likely to accept the probable trade-offs that the mandatory standards will impose and, hence, accept the new regulations. Further, consumers must be made aware of the fact that the risk of burn injury presented by children's sleepwear cannot be fully eliminated through regulatory measures. This will help to prevent consumers from relying too heavily upon the regulations and consequently neglecting to consider flame retardancy when purchasing sleepwear items.

2.4.2 Evaluative Research

Although the number and diversity of consumer education programs implemented in the last twenty plus years is quite extensive, relatively little research has been conducted assessing the impact and/or effectiveness of such programs until recently. There are several good reasons for this lack of evaluative research. Many involved in the development and implementation of consumer education programs strongly believed that education would modify

behaviour appropriately and therefore saw no need to confirm this belief through evaluation. Also, in order to control for confounding variables and thus increase the internal validity of results, complex research designs are required. Further, many program-induced changes in consumer behaviour take a long time to occur and therefore be detected, thus necessitating a long time frame for the experiment (Staelin, 1978, pp. 30-31). Finally, difficulties in developing instruments to obtain valid and reliable measurements of a consumer education program's impact have been encountered.

In recent years, several studies have been conducted in order to assess the impact and/or effectiveness of consumer education programs (Bloom & Ford, 1979; Crosby & Taylor, 1981; Crown & Brown, 1983; Langrehr, 1979; Reid & Preusser, 1983; Staelin, 1978; Wright, 1979). Also, many studies investigating the impact of nutrition, health and safety education programs are of interest (Chambers, 1970a; Chambers, 1970b; Dershewitz & Williamson, 1977; Edwards et al., 1985; Goldberg et al., 1978; Laner & Sell, 1960; McLoughlin et al., 1982; Robertson et al., 1974). A brief summary of the educational strategies involved in and the aspects of consumer behaviour examined by these studies will be presented first with a discussion of pertinent results. Trends in the methodologies and instruments used will then be outlined.

Bloom and Ford (1979) conducted a cross-sectional evaluation of the impact of the public television series "Consumer Survival Kit" on knowledge, satisfaction, information-seeking behaviour and complaint or redress behaviour of the series' viewers. Each half-hour episode covered a specific consumer issue and consisted of a true-false quiz, several humourous and serious skits and the offer of an informative booklet on the issue. The experimental group was randomly drawn from a list of viewers who purchased the offered booklets whereas the control group consisted of non-viewing residents randomly drawn from state telephone directories. Self-reports provided the measurements of information-seeking and redress behaviour. Exposure to the television series was found to increase consumers' knowledge and information-seeking behaviour, but had no significant effect on their satisfaction or other consumption behaviours. Langrehr (1979) conducted a study to determine the effect of high school consumer education related courses on students' knowledge of general consumer issues and attitudes toward business. Included as the consumer education related courses were a course in economics which emphasized traditional economic theories and principles and a course in consumer education which specifically covered a broad range of consumer issues. Assignment of students to classes was random, but the choice of classes included in the experiment was arbitrary. To compensate for this, the

data were adjusted using social class, intellectual ability and competency/attitude pretest scores as covariates during the analysis. Langrehr (1979) found the consumer education course to increase the students' knowledge significantly but it had no effect on their attitudes toward business. He also determined that the economics course had no effect on the students' knowledge of general consumer issues. Crosby and Taylor (1981) investigated the impact of the educational brochure "Carpets and Rugs" published by the General Services Administration of the U. S. federal government, on consumers' knowledge, cognitive complexity, salience of attributes, expectations, use of consumer information and purchase intention during a simulated choice of carpeting. The publication "Carpets and Rugs" was chosen because it covered most of the performance related topics of interest and because it was easy to read. A random sample was systematically drawn from tax records. Pretest carpet knowledge and experience scores were used to stratify participants. Assignment to experimental treatments was random, from each stratum. Static group comparisons were then carried out. It was observed that consumer education increased consumers' knowledge and cognitive complexity, that is the number of attributes they considered during the choice process. However, consumer education had no effect on the value or importance consumers attached to product attributes, or on their use of consumer information during the purchase decision. Nor

did the consumer education strategy help to align consumers' expectations with objective evaluations of product performance. Further, it was found not to increase the likelihood of consumers choosing carpets with superior performance characteristics.

The following studies investigated the effects of consumer education programs on consumer product safety knowledge, attitudes and/or behaviour. Staelin (1978) conducted a longitudinal evaluation to investigate the effect of a classroom program consisting of eight thirty-minute modules on high school students' knowledge of general consumer product safety and related behaviour. The modules concentrated on technical rather than strategic information and consisted of films, games, product inspection and limited amounts of lecture material. Predetermined classes were randomly assigned to experimental and control treatments. Written questionnaires provided the measurements of both the students' knowledge and behaviour. The data was adjusted using the covariates family environment, school environment, risk aversion and intelligence. Staelin (1978) observed that the consumer education program increased the students' consumer product safety knowledge and improved their normative behaviour but not their actual behaviour. Crown and Brown (1983), using a convenience sample, conducted a study similar to Crosby and Taylor's

(1981) in order to assess the effectiveness of three educational strategies on consumers' knowledge, cognitive complexity, salience of attributes, use of consumer information and purchase intention during a simulated choice of upholstery fabric. The three educational strategies included in Crown and Brown's (1983) study comprised a ten-page pamphlet on durability and flammability properties of upholstery fabric; an audio-visual presentation which consisted of two slide/tape sequences on each of these two topics; and a combination of the two strategies. Group membership determined assignmnet to the educational treatments, however, assignment to consumer information treatments was random and stratified according to the consumers' educational treatment and upholstery knowledge/experience pretest scores. Consumer education was found to increase consumers' knowledge, especially their knowledge of fabric flammability, but had no effect on cognitive complexity or salience of attributes. Consumer education did affect fabric choice but this was more related to durability than flammability. The audio-visual strategy, with or withou the pamphlet, had the greatest impact. Reid and Preusser (1983) investigated the relative effectiveness of five educational strategies on children's playground safety knowledge and playground behaviour. Various combinations of eleven educational materials made up the five strategies. The eleven materials included three classroom materials: a curriculum outline and guidebook for teachers,

a playground equipment handbook and a slide/tape cartoon presentation designed for children; and eight home materials: an illustrated read-together booklet for adults and children (3 versions for 3 different age levels), a self-learning colouring book for children, a playground equipment guide discussing proper installation and maintenance, a four-fold leaflet illustrating nine playground hazards as well as proper installation and maintenance procedures and a film for adults covering safety issues and proper methods of installation and maintenance of equipment. Twelve schools were chosen to form the convenience sample, each undergoing a unique experimental condition. Interviews consisting of three open-ended questions provided measures of the children's playground safety knowledge and their playground behaviour was directly observed before and immediately after treatment as well as again eight weeks later. The children's playground safety knowledge and their improvement in playground safety behaviour increased as the amounts of materials provided increased. Though their gain in knowledge did not persist over time, the children's safer playground behaviour did.

Wright (1979) compared the effectiveness of four television commercials in increasing consumer's inspection of over-the-counter drug packages. The commercials varied in the concreteness of the language used within the verbal action recommendation as well as in the concreteness or

explicitness of the visual presentation. The sample used was drawn by a professional marketing firm. Through an ingenious means of coupon distribution as remuneration for participation and post-purchase interviews, direct observation of in-store package inspection was possible. Static group comparisons determined that the commercials using more concrete language and more explicit visual presentations were observed to increase consumers' inspection of packages, but only when the consumer had the opportunity of performing this behaviour soon after exposure to such commercials. Robertson et al. (1974) performed a very rigorous field experiment to assess the impact of a nine-month campaign of television commercials on seat belt use. During a preliminary survey, Robertson et al. discovered a relationship between seat belt use and having had a friend or relative injured, but not killed in an automobile accident. They concluded from this that the fear of disfigurement or disabilty was a strong motivational force in determining seat belt use and, hence, developed commercials stressing the effectiveness of seat belts in reducing the probability of disfigurement or disability. Using a dual cable system to control exposure to the commercials and cross-referencing licence plate numbers to household addresses receiving or not receiving the cable channels made direct and unobtrusive observation of seat belt use possible. Observations were carried out for one month prior to the campaign as well as throughout

the nine-month campaign. However, exposure to the commercials was found to have no effect on seat belt use.

Goldberg et al. (1978) assessed the influence of public service announcements and/or the episode of "Fat Albert" called "Junk Food", an educational cartoon featuring Bill Cosby, on first graders' subsequent choice of snack and breakfast foods. The convenience sample consisted of primarily upper middle class children, randomly assigned to one of eight experimental conditions. Static group comparisons revealed that exposure to the public service announcements or the educational cartoon significantly increased the children's choice of nutritious snack and breakfast foods, with the cartoon having the greatest effectiveness. However, no pretest measurements of the children's snack and breakfast food choices were taken. Edwards et al. (1985) investigated the effects of the nutrition program "Better Eating for Better Health" produced by the American Red Cross and the U.S. Department of Agriculture, on participants' knowledge, attitudes and behaviour. The program consisted of six two-hour modules, delivered by a qualified instructor. Two systematic pretests of the questionnaire prior to the actual evaluation allowed the development of highly reliable instruments. The experiemtnal group comprised those individuals who participated in the program at 51 chapters of the Red Cross. A non-equivalent control group was

drawn from individuals involved in a different program offered by the Red Cross. The participants' knowledge of nutrition as well as their related attitudes and behaviours were all observed to be affected positively by the Red Cross program.

Dershewitz and Williamson (1977) conducted a posttest-only evaluation of an educational program designed to decrease children's household injuries on the participants' household safety behaviour. The educational treatment consisted of a one-on-one twenty-minute discussion between a research assistant and the mother, covering significant household hazards relevant to the child's age, a take-home booklet as well as a follow-up telephone call. Clinic visitors formed the convenience sample and were randomly assigned to control and experimental conditions. Unannounced home visits, during which an eleven-point household hazard evaluation was conducted, provided the measurement of home safety behaviour. No significant difference in the participants' household safety behaviour was observed after the educational treatment. McLoughlin et al. (1982) investigated the effectiveness of the educational campaign "Project Burn Prevention" in reducing the incidence and severity of burn injuries. The project comprised educational strategies delivered through three separate channels: mass media, community organizations and schools. The mass media campaign included four television

public service announcements, three posters, a sixteen-page, four-colour booklet containing burn prevention information as well as publicity the project received via radio, television and newspaper coverage. The community program consisted of a one-hour presentation including a film, a game and a group discussion of burn prevention case studies led by a trained volunteer, which clubs or organizations could book for one of their regular meetings. The school program included teachers' guides, filmstrips, audio cassettes and games, all specifically designed for one of three grade levels. Participating teachers first attended a one-hour training session which introduced them to the materials and provided them with background information on burn injuries. Students in the highest grade level also received an illustrated text. Assignment to the treatment groups was arbitrary but subjects were randomly chosen from their treatment groups for the evaluation. The instruments used to measure participants' burn injury knowedge were demonstrated to have fair to good reliability and hospital records provided measures of the incidence and severity of burn injuries sustained. The community program and the school program were found to increase the participants' burn injury knowledge, the school program showing greater effectiveness. No decrease in the incidence or severity of burns was observed, however.

Laner and Sell (1960) investigated the impact of a poster campaign on industrial safety behaviour. Three different posters, all carrying the straight-forward instruction "Hook That Sling", were displayed in the work areas of participating iron and steel factories. Seven sites were arbitrarily chosen, six being experimental sites and one serving as control. Factory employees were chosen to be observers so the observations could be taken unobtrusively. The number of crane hooks left free and those secured were counted during a five-week period prior to the poster campaign. Observations were also taken during the first six weeks of the campaign and again during a two-week period seven weeks later. The posters significantly increased the number of crane hooks secured in the observed workplaces. Chambers (1970a & 1970b) evaluated the effect of leaflets discussing the safe use of chip (french fry) pans delivered to households in Exeter, England, on the frequency and size of chip pan fires. Statistics regarding the incidence and size of chip pan fires were obtained from the records of the Fire Research Station. Records during the ten years prior to the distribution of the leaflets and for two years after, were consulted. A significant reduction in the number and size of these fires was observed after distribution of the pamphlets.

In order to assess the impact of consumer education

strategies, a longitudinal quasi-experimental research design has been found to be most appropriate. Pre- and posttest scores as well as static group comparisons between the various treatment and control groups have been used to assess the changes in knowledge, attitudes and/or behaviour resulting from exposure to the various treatment or educational strategies. The pretest/posttest design ensures internal validity of the results to a much greater extent than static group comparisons (Campbell & Stanley, 1963, pp. 13-16). To measure all facets of consumer behaviour before and after treatments, however, would not only be cumbersome, but also might cause a testing by treatment effect thus reducing external validity. As a result, many experimenters have used pretest scores as covariates (Langrehr, 1978) or as criteria for stratifying the treatment and control groups when using static group comparisons (Crosby & Taylor, 1981; Crown & Brown, 1983).

A wide variety of concepts involved in consumer behaviour suggest possible measurements for studies evaluating consumer education programs. The present study is concerned only with the effects of consumer educational strategies on consumers' knowledge of flammability and of fire safety and their preferences or purchase intentions with respect to children's sleepwear. Therefore, only the general trends in the means of measuring cognitive and behavioural changes as illustrated in the aforementioned

studies will now be discussed.

As the interpretation and coding of answers to open-ended questions can be quite difficult, consumers' factual knowledge has been most commonly measured by means of instruments comprising multiple-choice questions (Bloom & Ford, 1979; Crown & Brown, 1983; Edwards et al., 1985; Goldberg et al., 1978; Langrehr, 1978; Staelin, 1978; Wright, 1979). Though logisitically much easier, multiple-choice answers do limit the number of alternatives available to the respondent as well as provide the respondent with prompts to aid recall, thereby detracting from the external validity of the results. In situations where it was believed important to test the consumers' unaided recall of information, open-ended questions have been used. Such was the case for the measurement of cognitive complexity, operationally defined as the number of product attributes considered during the purchase decision in the studies of Crosby and Taylor (1981) and Crown and Brown (1983). Reid and Preusser's (1983) measurement of children's playground safety knowledge also used this approach.

Most of the criticism directed at evaluative research of consumer education pertains to the validity of the instruments used to measure actual purchase or consumption behaviours. The measurement of actual behaviour, though by

far the most valid indicator, may be quite difficult. Observation necessitates the involvement of highly trained observers and considerable time, either of which may be beyond the practical limitations of an experiment. Further, situations in which the behaviour would normally occur may be impossible to monitor. For example, in Staelin's (1978) study, the safety principles learned during the thirty-minute modules would most likely occur at home. The children's choice of snack and breakfast foods which Goldberg et al. (1978) measured would likewise normally occur at home. Actual purchase behaviour of respondents could conceivably occur in a wide variety of retail outlets, and may not occur for quite some time after the experimental treatment. Simulating situations in which the behaviour would occur not only poses considerable logistical problems but may reduce external validity by introducing demand effects.

As a result, several proxies of behaviour have been developed. Hospital and fire department records have been used to provide frequencies of specific injuries and types of fires as an indicator of improved safety behaviour (Chambers, 1970a; Chambers, 1970b; McLoughlin et al., 1982). In order to measure students' safety behaviour, Staelin (1978) used a multiple- choice self-report of the students' actual behaviour and normative behaviour. Since the correlations between the actual and normative question

responses were low ($0.3 \leq r \leq 0.6$) thus coinciding with the assumption that people often do not behave the way they know they should, Staelin believed this measurement to be acceptably valid. Edwards et al. (1985) also used a written questionnaire to assess the participants' nutrition related behaviour. The instrument they developed consisted of twelve nutrition behaviours, including both positive and negative behaviours, for which the participants indicated the frequency with which they conducted these behaviours on a five-point scale. Factor analysis and the resultant Cronbach alpha coefficients indicated that this instrument provided an acceptably accurate and valid measurement of behaviour. Studies investigating the effect of consumer education on purchase or choice behaviours have measured purchase or choice intentions during simulated situations (Crosby & Taylor, 1981; Crown & Brown, 1983; Goldberg et al., 1978). As the product chosen was never actually purchased or consumed, the subjects' choice may be an inaccurate indication of their choice in a real situation. To reduce such demand effects, behaviour was measured some time after treatment (Crosby & Taylor, 1981; Crown & Brown, 1983), an unrelated activity was conducted between the treatment and measurement (Crosby & Taylor, 1981; Crown & Brown, 1983; Goldberg et al., 1978). Crown and Brown (1983) further increased the likelihood of their subjects choosing upholstery fabrics that they would choose in reality by incorporating a draw into the research

design. Each respondent's name was entered into the draw after completion of the experiment, the winner receiving enough of the upholstery fabric they chose during the experiment to recover a sofa and/or chair up to a maximum value of $400.

2.5 SUMMARY

As Sternthal and Craig (1982) state, consumer behaviour is a process of decision making during which consumers "acquire, organize and use information" (pp. 6-7). Consumer education, such as the three strategies evaluated in this study, is one way in which information can be made available to the consumer.

Consumers may encounter information intentionally or incidentally (exposure). The information encountered, however, in order to have any impact on consumer behaviour, must succeed in attracting the consumer's selective and limited information processing capacity (attention). Relevancy to the consumer's current situation as well as intrinsic characteristics of the message, such as novelty or physical salience, attract and/or maintain attention. The more attention paid to a message, the more processing of the message's information will be carried out and the more likely it is that the information will be transferred and retained in long-term memory (comprehension/perception,

retention). Messages perceived to be too incompatible with the consumer's existing knowledge, however, will not be accepted and therefore not transferred to long-term memory (yielding/acceptance). A source perceived to be highly credible by consumers will increase the likelihood of their accepting discrepant information. Repitition may also lead to the acceptance of incompatible information by increasing the consumers' familiarity with the information (Sternthal & Craig, 1982). Low-involvement learning, during which the receiver's personal connection with the message is minimal, is proposed as another condition under which discrepant information is accepted and retained in memory (Krugman, 1965).

If information is transferred to long-term memory, association and conceptualization, the first two levels of learning, have occurred. Creative or self-directed learning, the third level of learning, occurs when this information is incorporated within the decision process.

Information from the consumer's memory is used during the decision process to establish evaluative criteria, or the preferred (salient) product attributes, in order to judge the alternatives considered. Those attributes which exert influence on the evaluation process are not only salient but also determinant attributes.

During the evaluation process, consumers develop beliefs, attitudes and intentions about product attributes and alternatives. Beliefs and attitudes concerning an attribute or alternative must necessarily be positive before an intention to buy that alternative or an alternative with a particular attribute will be formed and the subsequent behaviour performed (the purchase).

Currently, most Canadian consumers are not aware that children's sleepwear poses a risk of burn injury. Further, they have a poor understanding of flammability terminology (Wall & Gallagher, 1983). Consumers' knowledge of clothing flammability is, at this point, unknown but assumed to be inadequate. Previous research indicates that consumers often do not consider flammability because they do not feel themselves to be at risk (Brown & Crown, 1983). Further, most people believe that they do act safely when in fact they may not (Staelin & Weinstein, 1974). Thus, information pertaining to flammability may be perceived as irrelevant and/or incompatible.

Though consumers state they have positive attitudes toward flame retardancy of many household textile and apparel items (Brown & Crown, 1983; Crown & Brown, 1981; Kelley et al., 1980; Wall & Gallagher, 1983), flame retardancy rarely appears to be a salient attribute during the choice process (Crown & Brown, 1983). If flame

retardancy is not salient, it certainly cannot be determinant in the choice process.

Consumer education has been demonstrated to improve consumers' knowledge, attitudes and/or behaviour. More intense and/or longer educational interventions have shown greater impact (Goldberg et al., 1978; McLoughlin et al., 1982; Reid & Preusser, 1983). Literary approaches to consumer education have been demonstrated to be inferior to audio-visual presentations (Crown & Brown, 1983; Winnet & Kagel, 1984). Educational strategies addressing a single behaviour which provide clear, concrete instructions for the desired behaviour have been proven effective (Chambers, 1970a; Chambers, 1970b; Laner & Sell, 1960; Wright, 1979).

Not all consumer education programs have been found to improve behaviour or to improve all the facets of behaviour as desired (Bloom & Ford, 1979; Crown & Brown. 1983; Dershewitz & Williamson, 1977; McLoughlin et al., 1982; Robertson et al., 1974). This may be attributable to faulty program design, time limitations or other limitations of the research design imposed by experimental situations, or, quite simply, limitations on what educational strategies can be expected to achieve. Many researchers in the area of safety and public health believe that passive protection, that is mandatory standards, is a much more effective means of reducing the frequency and/or

severity of injuries, than relying on consumers' voluntary actions or behaviour modification (Haddon, 1972; Haddon, 1974; McLoughlin et al., 1982; Robertson et al., 1974; Sell, 1977). However, such mandatory regulations are often subject to extensive public resistance. Such has been the case with the legislation regarding the fluoridation of drinking water, the pasteurization of milk and the chlorination of water, for example (Robertson et al., 1974; Sapolsky, 1968). Further, there is little evidence to suggest that consumers actively seek out information on product safety (Staelin & Pittle, 1978) or consider safety a salient product attribute (Crown & Brown, 1983). Hence, consumer education may play an important role in modifying attitudes so consumers are willing to accept passive approaches as well as in heightening consumer awareness and understanding of consumer product safety issues. As a result, consumer education programs may enhance and supplement mandatory regulations and thereby increase the effectiveness of a passive approach.

Researchers investigating the impact of consumer education programs have found a longitudinal quasi-experimental research design, employing pre- and posttest as well as static group comparisons, to be most appropriate. The use of a true experimental pre/posttest design often raises serious questions about the external validity of the results since pretesting may give rise to

confounding. The use of static group comparisons alone, however, decreases the internal validity of an experiment's results. Thus, pretest measurements have often been used as covariates (Langrehr, 1978), or as a means of stratifying consumer education treatment groups.

Written tests, usually comprising a series of multiple-choice or Likert scale responses, have been the most common means of measuring consumers' knowledge. These types of questions facilitate the interpretation and coding of responses, but reduce external validity since only a limited selection of responses is available and the provided responses may act as prompts to aid consumers' recall. Open-ended questions, though logistically more cumbersome, greatly increase external validity.

Since the direct observation of actual purchase or consumption behaviour is often very difficult, most researchers have used simulated choice situations or written self-reports as a means of measuring choice or consumption behaviours. In order to increase the validity of these measurements, researchers have often disguised the true purpose of the study and paid particular attention to the timing of measurements, that is they have measured choice before particular aspects of knowledge or attitudes.

CHAPTER 3

METHODOLOGY

3.1 INTRODUCTION

The purpose of this study was to evaluate three consumer educational strategies with respect to their impact on consumers' clothing flammability knowledge and on consumers' preferences for children's sleepwear. This chapter will outline the methodology of the research. The variables to be measured, the hypotheses to be tested, the educational strategies used and the operational definitions for this study will be discussed first. The instruments and research design used, as well as methods of sampling, data collection and statistical analysis performed will then be described.

3.2 VARIABLES

3.2.1 Independent Variables

3.2.1.1 Experimental Variables

The independent experimental variables include the exposure to three educational strategies as well as which strategy the consumers were exposed to.

1. Exposure to the CCAC videotape.

2. Exposure to the CCAC/CPS poster presentation.
3. Exposure to the alternative poster presentation.
4. Which specific strategy the consumer was exposed to.

3.2.1.2 Demographic Variables

Included as demographic variables are the respondent's (parent's):

1. Total number of children
2. Number of children under thirteen years of age
3. Level of education
4. Years of education
5. Age
6. Sex
7. Residence

3.2.2 Dependent Variables

The dependent variables include:

1. Consumers' knowledge of children's sleepwear flammability.
2. Consumers' knowledge of action children should take when their clothing catches fire.
3. Consumers' preferences for children's sleepwear styles for their daughter(s).

4. Consumers' preferences for children's sleepwear styles for their son(s).
5. Consumers' attention to the poster presentation.

3.3 HYPOTHESES

The following hypotheses, stated in the null form, were formulated from the literature review as well as from a consideration of the objectives of the consumer educational strategies.

To evaluate the CCAC videotape's effectiveness in increasing consumers' clothing flammability knowledge and in altering their preferences and purchase intentions, the following three hypotheses were proposed:

H1: There will be no difference in consumers' knowledge of children's sleepwear flammability between those who have seen the CCAC videotape and those who have not.

H2: There will be no difference in consumers' knowledge of the action children should take when their clothing catches fire between those who have seen the CCAC videotape and those who have not.

H3: There will be no difference in consumers' preferences for styles of children's sleepwear between those who have seen the CCAC videotape and those who have not.

To evaluate the CCAC/CPS poster presentation's effectiveness in increasing consumers' clothing flammability knowledge and in altering consumers' preferences and purchase intentions for children's sleepwear, the next three hypotheses were formed:

H4: There will be no difference in consumers' knowledge of children's sleepwear flammability between those who read the CCAC/CPS poster presentation and those who have not.

H5: There will be no difference in consumers' knowledge of the action children should take when their clothing catches fire between those who have read the CCAC/CPS poster presentation and those who have not.

H6: There will be no difference in consumers' preferences for styles of children's sleepwear between those who have read the CCAC/CPS poster presentation and those who have not.

To evaluate the alternative poster presentation's effectiveness in increasing consumers' clothing flammability knowledge and in modifying their preferences and purchase intentions for children's sleepwear, the following three hypotheses were formulated:

H7: There will be no difference in consumers' knowledge of children's sleepwear flammability between those who

have read the alternative poster presentation and those who have not.

H8: There will be no difference in consumers' knowledge of the action children should take when their clothing catches fire between those who have read the alternative poster presentation and those who have not.

H9: There will be no difference in consumers' preferences for styles of children's sleepwear between those who have read the alternative poster presentation and those who have not.

To determine whether the demographic variables age, sex, level of education, years of education, residence, total number of children and number of children under thirteen influence the effectiveness of the consumer educational strategies, the following three hypotheses were developed:

H10: There will be no difference in consumers' knowledge of children's sleepwear flammability after exposure to an educational strategy between consumers of different ages, sex, levels of education, years of education, and residence, and with total number of children and number of children under thirteen.

H11: There will be no difference in consumers' knowledge of the action children should take when their clothing catches fire after exposure to an educational strategy

between consumers of different ages, sex, levels of education, years of education, and residence, and with total number of children and number of children under thirteen.

H12: There will be no difference in consumers' preferences for styles of children's sleepwear after exposure to an educational strategy between consumers of different ages, sex, levels of education, years of education, and residence, and with total number of children and number of children under thirteen.

To determine whether educational strategies differ in their level of effectiveness, the next three hypotheses were developed:

H13: There will be no difference in consumers' knowledge of children's sleepwear flammability between those who saw the CCAC videotape, those who read the CCAC/CPS poster presentation, and those who read the alternative poster presentation.

H14: There will be no difference in consumers' knowledge of the action children should take when their clothing catches fire between those who saw the CCAC videotape, those who read the CCAC/CPS poster presentation, and those who read the alternative poster presentation.

H15: There will be no difference in consumers' preferences for styles of children's sleepwear between those who

saw the CCAC videotape, those who read the CCAC/CPS poster presentation, and those who read the alternative poster presentation.

To determine whether the CCAC/CPS or the alternative poster presentation attracted the consumers' attention more than the other, the following hypothesis was formulated:

H16: There will be no difference in the proportion of consumers who noticed and/or read the poster presentation between those consumers receiving the CCAC/CPS poster presentation treatment and those receiving the alternative poster presentation treatment.

3.4 DESCRIPTION OF EDUCATIONAL STRATEGIES

3.4.1 CCAC Videotape

The CCAC videotape is an entertaining and fairly light-hearted ten-minute program during which Muppet-style puppets teach parents and children general issues of fire safety in the home and the fire hazards of children's sleepwear. The characters include Fire Prevention Canada's (Fiprecan's) character "the old lady", her dog Sniff, a

firechief, the very accident-prone Cousin Jim, and a group of children. The children are all dressed in styles of sleepwear that pose lower levels of risk of burn injury. Points covered during the videotape include:

1. Loose-fitting sleepwear garments pose the greatest risk of burn injury because they can more easily come into contact with an ignition source.
2. The importance of installing smoke detectors in the home and the importance of checking them periodically to ensure that they function properly.
3. The identification of, and importance of avoiding hazardous situations, such as climbing cupboards near the stove, playing near an open fireplace, and playing with matches.
4. The explanation and demonstration of the 'stop, drop and roll' rule for extinguishing burning clothing. This rule is an improved version of the 'stop, drop and roll' rule shown on the chidren's television program 'Sesame Street' as the children are also instructed to cover their head as they roll.

3.4.1 CCAC/CPS Poster Presentation

The CCAC/CPS poster presentation consists of a bright

blue board bearing the logos of CCAC and CPS in white. Two clear plastic pouches are mounted on this board to hold English and French versions of various leaflets which CCAC distributes to pediatricians. The topics covered by the CCAC leaflets comprise a wide range of child safety issues and the plastic pouches facilitate their periodic rotation. The English and French versions of CCAC's leaflet concerning clothing fires are included in Appendices A and B respectively.

3.4.3 Alternative Poster Presentation

The alternative poster presentation also consists of a bright blue board bearing the following acknowledgement: "Joint Project of the Departments of Clothing & Textiles & Social & Preventive Medicine, University of Manitoba" printed in white letters. Two clear plastic pouches hold English and French versions of a three-colour Walter Whale (Beaubeau la Baleine) poster. Below, pockets hold an activity booklet and the public is invited to take a copy. Copies of the posters as well as the activity booklets are included in Appendices C, D, E and F.

Guidelines for the informational content of the alternative presentation were provided by CCAC's videotape and leaflet. It was decided to copy the blue board with white logo background and size of the CCAC/CPS poster in

order to reduce the number of characteristics being varied. Also, it was hoped that, if the alternative poster was found to be more effective, it would be possible to provide suggestions for improvement that could easily be incorporated into the existing CCAC/CPS presentation. From a perusal of literature pertaining to the impact of content and format variables on message effectiveness, seven factors were chosen and incorporated into the design of the alternative poster. They include source, wording, threat or fear arrousal, specificity, involvement, repitition and labeling. These concepts will now be discussed and their operationalization explained.

The source of a message refers to who delivers the information to the intended audience and may act on several levels simultaneously. Since parents are generally responsible for the purchase decision of children's sleepwear, they form the intended audience. However, in the hope that children would transmit the information to their parents, the presentation was designed to initially attract children's attention. Jones (1970) found this method to be quite effective in disseminating nutrition information to mothers. Further, as a result of personal experience, the author believed that the children would be much more likely to remove the provided pamphlets. Hence, the children, in a certain respect, act as the source of the message. The involvement of the parents was

encouraged, however, by addressing them directly in the poster's caption.

At the same time, the source of the alternative poster may be perceived as Walter Whale (Beaubeau la Baleine) or the departments of Clothing & Textiles and Social & Preventive Medicine of the University of Manitoba. Two factors are important when choosing a message's source: the source's attractiveness and appeal, as well as its credibility (Sternthal & Craig, 1982). A source's attractiveness is a subjective matter, however, it is believed that the cartoon character Walter Whale (Beaubeau la Baleine) would be appealing to children. In order to lend credibility to this character, it was determined that the choice of an animal which reflected and somewhat embodied the activities of fire fighting and fire prevention would be best (Sternthal & Craig, 1982). Since whales are perceived to squirt water, a whale was chosen.

To lend further credibility, especially for the parents, the names of the responsible University of Manitoba departments were clearly displayed on the poster. It is believed that the departments of Clothing & Textiles and Social & Preventive Medicine would be perceived as very knowledgeable in the areas of clothing flammability and burn injury prevention, as well as trustworthy.

Most of the criticism directed at consumer education pamphlets pertains to their wording and level of language (Charters, 1973; Williams, 1975). Complex phraseology and technical jargon may not only be beyond the comprehension abilities of some consumers, but also require a substantial amount of effort in order to be comprehended by any consumer. Thus, many consumers may not bother to finish reading a pamphlet or may only skim through it because they do not wish to expend the necessary effort required to understand the information fully.

Threatening appeals entail warning consumers about the possible physical or emotional consequences of inappropriate behaviour as a means of persuading them to modify behaviour (Sternthal & Craig, 1982). It has been found that increasing the level of threat will increase the message's persuasiveness but only up to a point. Beyond this point, increasing threat will reduce the message's persuasiveness (Ray & WIlkie, 1970). Leventhal (1970) proposes that threats activate two parallel but independent response processes: danger control and fear control. Danger control processes information about what constitutes danger and how to cope with it, resulting in adaptive behaviour. It is activated by low and moderate levels of threat. Fear control, however, processes emotional responses to threats, such as anxiety, and leads to behaviour to cope with these emotional responses

(reduce anxiety). Possible behaviours resulting from fear control include defence mechanisms, such as repression or denial, which interfere with the more positive behaviours proposed by danger control. Fear control is activated at high levels of threat.

Specificity refers to the explicitness or concreteness of the message. Several researchers have discovered that strategies which clearly described or illustrated strategic behaviour had greater impact on the desired behaviour (Chambers, 1970a; Chambers, 1970b; Laner & Sell, 1960; Winnet & Kagel, 1984; Wright, 1979).

Since the flammability of children's sleepwear is an issue which presents a certain amount of threat, the risk of burn injury was not stressed in the alternative poster presentation. Clear, concise instructions of how to choose safer sleepwear as well as how to react if clothing does catch fire were incorporated not only because previous research indicates the effectiveness of specificity, but also to encourage danger control responses over fear control responses.

Involvement includes the consumer's active physical participation as well as the notion of involvement proposed by Krugman (1965): "the number of conscious 'bridging experiences', connections or personal references that the

viewer makes between his [her] life and the stimulus" (p. 35).

In order to increase this latter notion of consumer involvement, the message must be closely related to the everyday lifestyle of the consumer. This will intensify information processing because the consumer will perceive the information to be relevant and hence pay more attention to it. It is hoped that the subject of improving one's child's safety will be perceived as relevant to all parents.

Active participation with the message will also increase the amount of information processing as it provides the consumer with the opportunity to rehearse what he/she has learned. Hilgard and Bower (1966) emphasize the potential of this practice but caution that feedback is necessary to ensure that the correct response is being rehearsed and reinforced.

To encourage the consumer's and especially the children's active participation, the pamphlet was written as an activity book, with games and puzzles to be completed. To increase the likelihood that the correct response would be rehearsed when choices were to be made, the correct answers were visible on the opposite page.

Generally, repitition of messages has been found to increase the likelihood of the information being stored in memory, to modify consumers' attitudes as well as to increase the likelihood of complaint behaviour (McCullough & Ostrom, 1974; Sternthal & Craig, 1982). Each subsequent exposure will initiate the retrieval and rehearsal of information learned during previous exposures thus reinforcing the message's impact. If the intitial response to the message is quite negative, however, repitition will only reinforce negative beliefs, attitudes and/or behaviour (Saegert, Swap & Zazonc, 1973).

Repeated messages are subject to wearout. Craig, Sternthal and Leavitt (1976) suggest this may be attributable to consumers' subsequent inattention. Another explanation is that after a certain amount of repitition, the information is learned, requiring no further processing (Calder & Sternthal, 1980).

Labeling involves interpreting and commenting on the consumer's actions and verbal statements in such a way that the consumer perceives himself/herself as being the type of person who would perform the desired behaviour (Sternthal & Craig, 1982). This makes the behaviour more salient to consumers since it has been closely related to them personally. Labeling also draws consumers' attention to their own behaviour. As a result, more information

processing concerning the behaviour is performed, making retrieval more likely.

Swinyard and Ray (1977) and Miller, Brickman and Bolen (1975) found that labeling significantly increased the likelihood of the consumers behaving in the desired manner. Labeling is especially effective when consumers are uncertain about their disposition concerning the behaviour in question and when the communicator is perceived to have the necessary expertise or knowledge to confer the label (Sternthal & Craig, 1982). For this last reason, labeling lends itself much more easily to person-to-person situations. During mass media communications, labeling may trigger counterarguments such as 'how do they know I'm...?'.

Labeling was incorporated into the leaflet via the "Walter Whale Fire Safety Badge" (le Badge Anti-Incendie de Beaubeau la Baleine). Repitition was used to illustrate the points it was hoped would be learned, thus stressing that the children had earned the badge, thereby increasing the credibility of the label.

Repitition was also used to increase the processing of the points covered in the leaflet. A brief summary of the information was presented just before the cut-out badge. The wording and the presentation of the information was

different so as to reduce the possibility of wearout.

3.5 OPERATIONAL DEFINITIONS

1. Treatment

   Treatment comprises two categories, exposure and non-exposure, for each educational strategy. Exposure to the videotape means that the respondent attended a meeting during which the videotape was shown. Exposure to the poster presentation means that the respondent noticed the poster and read the provided leaflet.

2. Knowledge of Children's Sleepwear Flammability

   The consumer's knowledge of children's sleepwear flammability was assessed by measuring their ability to select the most flammable style out of a choice of three children's sleepwear styles.

3. Knowledge of Action to Take When Clothing Catches Fire

   The consumers' knowledge of action to take when clothing catches fire was assessed by measuring their ability to provide an appropriate response when asked, " What can you teach your children to do if their clothing catches fire?"

4. Preferences of Children's Sleepwear Styles

The consumers' preferences were determined from their choice out of three possible styles, the sleepwear garment they would most likely buy for their son(s) or daughter(s).

5. Attention to the Poster Presentation

The attention consumers paid to the poster presentation was assessed by determining whether or not they noticed the presentation and whether or not they read the leaflet provided.

6. Total Number of Children

The total number of children included all the consumer's children, regardless of age.

7. Number of Children Under Thirteen

The number of children under thirteen included only those children who are twelve years of age or younger. After the age of twelve, children have much more input in the purchase decision of their own clothing (Ryan, 1966). Therefore, the number of children under thirteen was examined separately, since, for these children, it is generally the parents who are responsible for children's clothing purchase decisions.

8. Level of Education

The consumers' level of education was measured by his/her highest level of education completed.

9. Years of Education

The number of years of schooling the consumer has completed.

10. Age

The consumer's age in years.

11. Sex

The consumer's gender, male or female.

12. Residence

The consumer's place of residence, urban or rural.

3.6 INSTRUMENTS

To assess the effectiveness of the videotape, a questionnaire was developed. The respondents were first asked to say how many sons and/or daughters they had and to provide their corresponding ages. If the respondents had any daughters, they were asked to choose from among three girls' sleepwear garments, the style they would most likely

buy for their daughter(s). If the respondents had any sons, they were asked to choose from among three boys' sleepwear garments, the style they would most likely buy for their son(s).

An open-ended question was not used to determine the consumers' preferences since it was not known whether the consumers would have the necessary expertise to describe style features and fibre content accurately and adequately. The multiple-choice format avoided the problems of interpreting the respondents' answers, developing criteria to categorize and code the wide range of possible responses, as well as rendered the question easier and less time-consuming to answer. Pen and ink sketches of the garments were used instead of photographs in order to keep costs at a minimum see [Figure 4]. The sketches also increased the homogeneity of the garments presented and therefore eliminated biases which might occur because of colour and fabric design differences between the garments. Since the questionnaire was to be mailed, presenting samples of actual garments was not possible. The garments presented in the sketches were representative of popular styles of children's sleepwear available in the marketplace and included high, medium and low fire risk styles for both boys and girls.

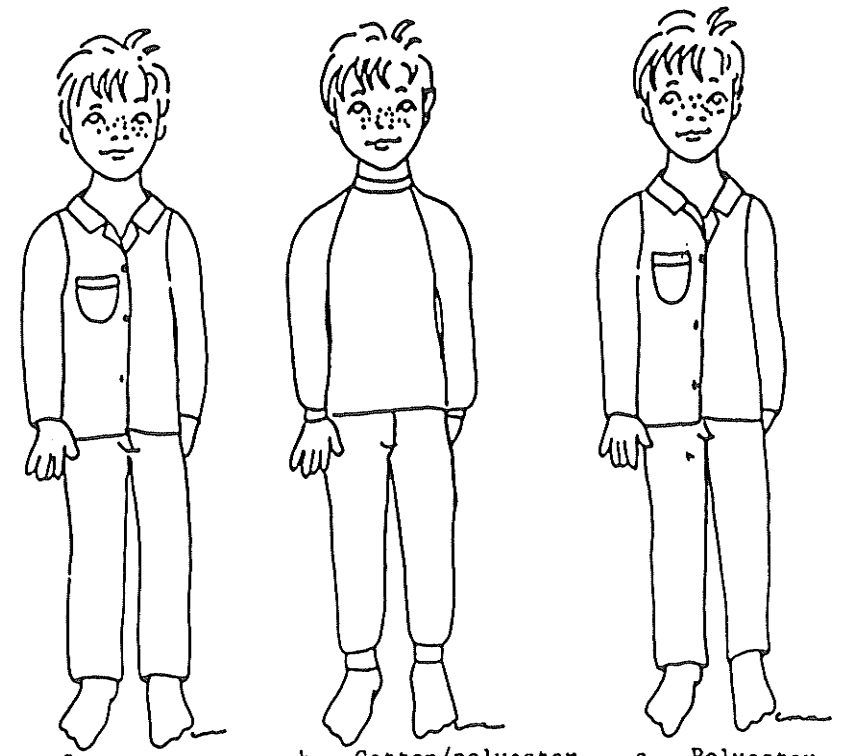
2 A.

a. Cotton flannelette

b. Cotton/polyester knit

c. Polyester flannelette

2 B.



a. Cotton flannelette

b. Cotton/polyester knit

c. Polyester flannelette

FIGURE 4

The respondents were then asked to choose out of the three girls' sleepwear styles, the garment they believed to be most flammable. This question was then repeated using the boys' sleepwear styles. These questions were asked after the consumers had reported their preferences in order to reduce any demand effects.

An open-ended question asked the respondents what they could teach their children to do if their clothing catches fire. An open-ended format was chosen in this instance because the number of different responses was not that great. Further, a multiple-choice format may not have measured the respondents' actual knowledge of the appropriate action, but rather their ability to deduce the best response from the provided selection.

The following demographic information was also solicited: the highest level of education completed by the respondent, the respondent's total number of years of schooling, the respondent's age, his/her sex and his/her place of residence, rural or urban. A copy of the questionnaire is included in Appendix G.

To assess the effectiveness of the poster presentation, personal interviews were conducted in the waiting rooms of pediatricians' offices where the posters were on display. If the child's caregiver was willing to participate, he/she

was first asked to complete the same questionnaire as was previously described. Upon completion of the questionnaire, the respondents were asked if they had noticed the poster presentation and, for the CCAC/CPS poster presentation, if so, when. For the CCAC/CPS poster presentation, the respondents were asked if they had ever read any of the provided leaflets. If they had, they were asked to recall the topics covered by the leaflets. Next, they were asked specifically if they had read the leaflet concerning children's clothing flammability. For the alternative poster, since only one leaflet was provided, the respondents were simply asked if they or their children had read it.

The questions concerning the attention consumers had paid to the poster presentations were delayed until after the other information was collected so as to disguise the true purpose of the study and thereby reduce demand effects. Further, the respondents were asked if they had read or heard any other information about the flammability of children's sleepwear, and, if so, where they had come across it. Although this information is not directly involved in the hypotheses of this study, it does provide insights for future research and further consumer education needs. The script for the interview is included in Appendix H.

3.7 RESEARCH DESIGN

For the evaluation of the effectiveness of CCAC's videotape, the Solomon four-group quasi-experimental design was implemented. This research design includes the following experimental and control groups:

PRETESTED GROUPS

EXPERIMENTAL GROUP 1

Pretest	Treatment (Exposure to videotape)	Posttest

CONTROL GROUP 2

Pretest	Treatment (Non-exposure to videotape)	Posttest

POSTTEST-ONLY GROUPS

EXPERIMENTAL GROUP 3

-	Treatment (Exposure to videotape)	Posttest

CONTROL GROUP 4

-	Treatment (Non-exposure to videotape)	Posttest

This research design offers many advantages. The pre/posttest design of the pretested groups 1 and 2 ensures

greater internal validity of results than does static group comparison. The comparison of pre- and posttest measurements controls for history, maturation and testing confounds, but does not enable the researcher to identify which of these three confounding variables is responsible if confounding is realized. The inclusion of the posttest-only groups 3 and 4 and static group comparisons of all the posttest measurments (Groups 1 - 4) will indicate whether testing is confounding the results or if history and/or maturation is responsible. Further, the comparison of all the posttest meaurements also controls for any testing by treatment confounding. Thus external validity of the results will be increased (Campbell & Stanley, 1963, pp. 22-23).

During the evaluation of the effectiveness of the poster presentations, the respondents were categorized according to which treatment (poster) they were exposed to, as well as according to the attention they paid to the presentation (did they read the leaflet or not). Static group comparisons were then performed.

3.8 SAMPLING

3.8.1 Evaluation of CCAC Videotape

To conduct the evaluation of the CCAC videotape, a

sample of convenience was drawn by approaching organized clubs and special interest groups which met on a fairly regular basis and whose membership comprised mainly parents of young children. Executive members of the clubs were briefed as to the purpose and nature of the study and asked if they were interested in participating. As an incentive, the clubs received two dollars for every questionnaire completed by their members.

Members of the largest organization, which consisted of approxiamtely 200 parents, were randomly assigned to the pretested and posttest-only groups using the organization's mailing list: their attendance at the organization's meeting determined their assignment to the control and experimental groups. The other participating organizations were assigned either to treatment group 3 or 4, in such a manner as to balance out the distribution of respondents among the four treatment groups. Participants viewed the videotape during one of their regularly scheduled meetings of their clubs.

3.8.2 Evaluation of Poster Presentations

Doctors practising in the pediatric departments of two Winnipeg medical clinics were contacted, briefed as to the nature and purpose of the study and asked if they were willing to allow the study to be conducted in their

departments. These two departments were chosen because of their specialization in pediatrics, their large size and because of the broad cross-section of patients that they catered to. The sample of convenience drawn to evaluate the effectiveness of the poster presentations therefore comprised the parents or caregivers of the doctors' patients who were willing to participate. Only those parents who had brought their children in for a regular check-up were approached so as not to annoy any parents whose children were seriously ill. This information was gained through consultation with the receptionist.

3.9 DATA COLLECTION

3.9.1 Evaluation of CCAC Videotape

Those members of the groups assigned to treatment groups 1 and 2 (the pretested groups), were mailed a questionnaire with the organization's newsletter, prior to a regular meeting. A cover letter introduced the researchers and explained that the organization had agreed to cooperate in the study. The participants were assured that their responses would be kept in strict confidence, and told that participation was voluntary. Since knowledge of the true purpose of the study may have produced demand effects, all participants were told only that the study was about children's sleepwear. A postage-paid envelope was

included for the respondents to return the questionnaire.

At the meeting of the largest organization, the researchers thanked those members who had already filled out a questionnaire and introduced the study. The members were assured that their responses would be treated in confidence and the fact that participation was voluntary was stressed. The members were then told that they would soon receive a follow-up questionnaire in the mail, were asked to fill it out and return it using the postage-paid envelope provided. The videotape was then shown. The videotape was followed by a slide presentation concerning general issues of children's safety in the home. This was done in order to reduce the possibility of the participants paying more attention to the videotape than they normally would and also to simulate more realistcally how consumers would normally be exposed to the videotape, that is among an influx of other information. Attendance at this meeting was noted so as to determine the members' assignment to the control and experimental groups. Copies of the cover letters accompanying the questionnaires are included in Appendices I, J and K.

During the meetings of the other participating clubs, the same procedure was followed except that the members were asked to fill out their addresses on adhesive labels. It was explained that these labels would only be used to

mail the questionnaires and that no record of the respondents' names or addresses would be kept. Cover letters accompanying these questionnaires followed the same format as the letter included in Appendix J, but the organization's name was changed.

All of the posttest questionnaires were sent through the mail about a week after the presentation of the video. This was done in order to be able to assess the more long-term effects of the videotape, rather than its immediate effects.

3.9.2 Evaluation of Poster Presentations

For one half of the days during which interviews were conducted at the pediatricians' offices, that is six days, the CCAC/CPS poster presentation was on display. For the remaining six days, the alternative poster presentation was displayed. As patients checked in with the receptionist, the nature of their visit, be it an emergency or a regular check-up, was determined. Those parents of children awaiting regular check-ups were approached at least five minutes after their arrival. This delay was incorporated in order to allow some time for the parents to see the poster and read the provided leaflet. Introduction of the study followed the same format as during club meetings. Confidentiality and the voluntary nature of participation

were stressed. If the parent(s) agreed, the interview was then conducted. A copy of the cover letter attached to the questionnaire is provided in Appendix M.

3.10 DATA ANALYSIS

Since nominal data were collected, the hypotheses were tested by constructing appropriate two-way frequency distributions and performing Chi-square tests for homogeneity and independence. The frequency distributions to be constructed for each hypothesis are described below:

H1: Exposure/non-exposure to the CCAC videotape BY consumers' knowledge of girls' sleepwear flammability.

H1: Exposure/non-exposure to the CCAC videotape BY consumers' knowledge of boys' sleepwear flammability.

H2: Exposure/non-exposure to the CCAC videotape BY consumers' knowledge of action children should take when their clothing catches fire.

H3: Exposure/non-exposure to the CCAC videotape BY consumers' preferences for girls' sleepwear styles.

H3: Exposure/non-exposure to the CCAC videotape BY consumers' preferences for boys' sleepwear styles.

H4: Exposure/non-exposure to the CCAC/CPS poster presentation BY consumers' knowledge of girls' sleepwear flammability.

H4: Exposure/non-exposure to the CCAC/CPS poster

presentation BY consumers' knowledge of boys' sleepwear flammability.

H5: Exposure/non-exposure to the CCAC/CPS poster presentation BY consumers' knowledge of action children should take when their clothing catches fire.

H6: Exposure/non-exposure to the CCAC/CPS poster presentation BY consumers' preferences for girls' sleepwear styles.

H6: Exposure/non-exposure to the CCAC/CPS poster presentation BY consumers' preferences for boys' sleepwear styles.

H7: Exposure/non-exposure to the alternative poster presentation BY consumers' knowledge of girls' sleepwear flammability.

H7: Exposure/non-exposure to the alternative poster presentation BY consumers' knowledge of boys' sleepwear flammability.

H8: Exposure/non-exposure to the alternative poster presentation BY consumers' knowledge of action children should take when their clothing catches fire.

H9: Exposure/non-exposure to the alternative poster presentation BY consumers' preferences for girls' sleepwear styles.

H9: Exposure/non-exposure to the alternative poster presentation BY consumers' preferences for boys' sleepwear styles.

To test H10, H11 and H12, three series of two-way tables were constructed. One series included those respondents exposed to the CCAC videotape, another included those respondents exposed to the CCAC/CPS poster presentation and the third series comprised those respondents exposed to the alternative poster presentation. For each of the three hypotheses, seven two-way tables, one for each demographic variable, were constructed in each of the three series.

H10: Demographic variable values BY consumers' knowledge of girls' sleepwear flammability.

H10: Demographic variable values BY consumers' knowledge of boys' sleepwear flammability.

H11: Demographic variable values BY consumers' knowledge of action children should take when their clothing catches fire.

H12: Demographic variable values BY consumers' preferences for girls' sleepwear styles.

H12: Demographic variable values BY consumers' preferences for boys' sleepwear styles.

H13: Which educational strategy respondents were exposed to BY consumers' knowledge of girls' sleepwear flammability.

H13: Which educational strategy respondents were exposed to BY consumers' knowledge of boys' sleepwear flammability.

H14: Which educational strategy respondents were exposed to BY consumers' knowledge of action children should take when their clothing catches fire.

H15: Which eductional strategy consumers were exposed to BY consumers' preferences for girls' sleepwear styles.

H15: Which eductional strategy consumers were exposed to BY consumers' preferences for boys' sleepwear styles.

H16: Which poster presentation BY exposure/non-exposure.

Findings were considered statistically significant at $p \leq 0.05$.

CHAPTER 4

RESULTS

4.1 INTRODUCTION

The following chapter will first describe the samples used in the two experiments conducted to evaluate the CCAC videotape and the CCAC/CPS and alternative poster presentations. The results of these experiments will then be presented and discussed.

4.2 DESCRIPTION OF SAMPLES

4.2.1 Videotape Experiment Sample

As was explained previously, the sample used to evaluate CCAC's videotape was drawn from four special interest organizations. The largest organization provided respondents for the pretest as well as for the posttest, whereas the other organizations were only used to collect posttest data. The pretest consisted of 123 respondents, the response rate being 87.9%. The posttest sample included 148 participants. The response rates for the posttest, broken down by organization were 50%, 58.8%, 67.2% and 100% giving rise to an average response rate of 66.5%.

The respondents in the videotape experiment ranged in age from 23 to 43 years. Their children's ages varied from less than a year up to 22 years, though in order to qualify, at least one of their children had to be under the age of thirteen. The total number of children the respondents had ranged from one to seven with a median of 3 children (mode=3), while the number of children under thirteen they had was between one and seven with a median of 3 (mode=3). The respondents' education level ranged from incomplete junior high school to the receipt of a Master's degree. Over 80% of the respondents had completed high school and/or some post secondary education. The number of years of education the participants had received varied from five to twenty years with a mean of fourteen years. Finally, 99% of the sample was female.

Although the sample drawn for the evaluation of the videotape contained a broad cross-section of individuals with respect to their ages, number of children and educational backgrounds, the sample is slightly skewed towards larger families, as well as towards higher levels of education.

4.2.2 Poster Presentation Experiment Sample

The sample interviewed for the poster experiment consisted of those parents or caregivers who had brought

their children to the pediatricians' offices at the times during which the interviewer was present. Not all the parents present at these times were interviewed, however, since some parents were not in the waiting room long enough to be approached and a few refused to participate. A total of 194 parents did participate, 97 being exposed to the CCAC/CPS treatment and 97 being exposed to the alternative treatment.

Those parents or caregivers who did participate were between the ages of 16 and 52 years. Their children's ages ranged from less than a year to 23 years, though in order to qualify, at least one of their children had to be under thirteen years of age. The size of the participants' families varied between one and seven children, with the median number of children being 2 (mode=2). The number of children that the participants had under the age of thirteen ranged between one and four, the median being 2 children under thirteen (mode=1). The participants' education level ranged from incomplete elementary school to the receipt of a Master's degree. Slightly more than 75% of the participants had completed high school and/or some post secondary education. The number of years of education the participants had received varied from four to twenty-two, the mean being 12.9 years. Again, 99% of the participants were female.

The poster presentation experiment sample consisted of a broad cross-section of individuals in terms of their ages, number of children and levels of education. However, the sample is somewhat biased towards higher levels of education.

4.3 RESULTS

The results of this study will now be presented. The videotape experiment findings will be discussed first, followed by those of the poster presentation experiment. A discussion of the results within the context of previous research and theoretical concepts will then follow.

4.3.1 Videotape Experiment Results

The observed effects on the participants' knowledge of children's sleepwear flammability will be presented first, followed by the effects observed on their knowledge of action children should take when their clothing catches fire and on the participants' preferences for children's sleepwear styles. A discussion of the effects of the control variables total number of children, number of children under thirteen, level of education, years of education, age, sex and residence will follow.

4.3.1.1 Knowledge of Children's Sleepwear Flammability

The respondents' knowledge of children's sleepwear flammability was assessed by their responses to questions 3A and 3B "Which of the three garments shown do you think is most flammable, that is, ignites and burns easily? Please circle one of the letters for BOTH (A) girls' and (B) boys' garments.". The correct response for 3A was 'a', the "long, cotton flannelette nightgown" and the correct response for 3B was 'a', the "cotton, flannelette tailored pyjama".

Frequency distributions of responses to Questions 3A and 3B are provided in Tables 1 and 2. In response to the question "Which of the three girls' garments do you think is most flammable, that is ignites and burns easily?", only 29 out of 111 respondents (26.1%) who received the pretest correctly identified the long, cotton flannelette nightgown. Very few, 11 (9.9%), picked the polo pyjamas while the majority, 71 (64%), selected the long, polyester flannelette nightgown. For those 33 who responded to a posstest after seeing the videotape, the results showed a modest increase in the proportion of respondents who made the correct choice, from 12.5 to 18 percent. However, the percentage also increased from 34 to 43 percent among the 44 posttest respondents who had not seen the videotape. Further, of those 34 respondents who completed the postest

TABLE 1

GROUP ASSIGNMENT BY RESONSES TO QUESTION 3A *

GROUP ASSIGNMENT +	(a) long, cotton flannelette nightgown	(b) cottan/polyester polo pyjama	(c) long,polyester flannelette nightgown
Group 1 pretest	12.50% (5/40)	10.00% (4/40)	77.50% (31/40)
posttest	18.18% (6/33)	6.06% (2/33)	75.76% (25/33)
Group 2 pretest	33.80% (24/71)	9.86% (7/71)	56.34% (40/71)
posttest	43.18% (19/44)	6.82% (3/44)	50.00% (22/44)
Group 3 posttest	29.41% (10/34)	5.88% (2/34)	64.71% (22/34)
Group 4 posttest	28.57% (8/28)	7.14% (2/28)	64.29% (18/28)

* Question 3A : "Which of the 3 girls' garments do you think is most flammable, that is ignites and burns easily?" [Correct answer = a]

\+ Group 1 Treatment: Pretest Treatment Posttest

Group 2 Treatment: Pretest - Posttest

Group 3 Treatment: - Treatment Posttest

Group 4 Treatment: - - Posttest

TABLE 2

GROUP ASSIGNMENT BY RESONSES TO QUESTION 3B *

GROUP ASSIGNMENT +	(a) long, cotton flannelette tailored pyjama	(b) cotton/polyester polo pyjama	(c) long,polyester flannelette tailored pyjama
Group 1			
pretest	13.16% (5/38)	15.79% (6/38)	71.05% (27/38)
posttest	16.13% (5/31)	6.45% (2/31)	77.42% (24/31)
Group 2			
pretest	35.14% (26/74)	10.81% (8/74)	54.05% (40/74)
posttest	43.48% (20/46)	10.87% (5/46)	45.65% (21/46)
Group 3			
posttest	27.27% (9/33)	12.12% (4/33)	60.61% (20/33)
Group 4			
posttest	29.63% (8/27)	7.41% (2/27)	62.96% (17/27)

* Question 3b : "Which of the 3 boys' garments do you think is most flammable, that is ignites and burns easily?" [Correct answer = a]

+ Group 1 Treatment: Pretest Treatment Posttest

Group 2 Treatment: Pretest - Posttest

Group 3 Treatment: - Treatment Posttest

Group 4 Treatment: - - Posttest

only after seeing the videotape, 10 (29%) correctly identified the cotton nightgown, a similar percentage to those posttest-only respondents (28.5% or 8/28) who had not seen the videotape.

In response to the question "Which of the three boys' garments do you think is most flammable, that is ignites and burns easily?", only 31 out of 112 (27.7%) respondents correctly identified the cotton flannelette tailored pyjamas. The results showed a slight increase from 13 to 16 percent, in the proportion of respondents who correctly identified the cotton pyjamas for those 31 who responded to the posttest after watching the videotape. A similar increase, though, from 35 to 43 percent, was also observed for the 46 posttest respondents who did not see the videotape. Further, there was only a minimal difference in the proportion of posttest-only respondents who correctly identified the cotton pyjamas between those who had seen the videotape (27.3% or 9/33) and those who had not (29.6% or 8/27).

Chi-square analysis was undertaken to determine whether the increases between the pre- and posttest as well as between control and experimental groups were significant for questions 3A and 3B. However, expected cell sizes of less than five rendered the results of questionable validity. The distribution of X^2 used to determine

critical significance values is a continuous theoretical frequency curve. When the expected frequencies are small, that is less than five, the actual sampling distribution of X^2 may exhibit marked discontinuity. The theoretical continuous curve of X^2 may thus provide a poor fit to the data and result in appreciable error in the estimation of probabilities (Blalock, 1972). Possible solutions for this include increasing the sample size, mathematical adjustments, such as Yates correction for continuity or the Likelihood Ratio Chi-square, or, where logical, the combination of categories. This last solution was chosen and performed in two ways so that a distinction between consumers' knowledge of clothing flammability attributable to garment design and their knowledge of clothing flammability attributable to fibre content was possible.

First, the responses were reduced to a "safe design" versus an "unsafe design". Hence, the responses "long, cotton flannelette nightgown", "long, polyester flannelette nightgown", "cotton, flannelette tailored pyjama" and "polyester flannelette tailored pyjama", because of their looseness-of-fit, were considered as "unsafe designs". The response "cotton/polyester polo pyjama" was considered as a "safe design". It is important to note that this reclassification of response categories concentrates solely on the role of design line, ignoring the role that fibre content plays in determining a garment's flammability.

The second reclassification of the response categories reduced them to a "safe choice" versus an "unsafe choice"; safe being determined by the new federal regulations. Thus, the responses "long, cotton flannelette nightgown" and "cotton flannelette tailored pyjama" were considered "unsafe choices" while the responses "cotton/polyester polo pyjama, "long, polyester flannelette nightgown" and "polyester flannelette tailored pyjama" were considered "safe choices".

When the response categories were collapsed to the categories "safe design" and "unsafe design", at least 90% of the respondents correctly identified an unsafe design as being the most flammable for the girls' sleepwear garments while at least 84.2 % did so for the boys' sleepwear garments regardless of whether they were exposed to the videotape or not. Tables 3 and 5 present the frequency distributions of the responses to questions 3A and 3B respectively while Tables 4 and 6 present the Chi-square statistics, degrees of freedom and p-values resulting from the group comparisons.

A slight increase in the proportion of respondents who answered question 3A (girls' garments) correctly between the pretest and the posttest was noticed for group 1 and for group 2. Ninety percent of group 1 (36/40) answered correctly during the pretest while 93.9% (31/33) answered

TABLE 3

GROUP ASSIGNMENT BY RESPONSES TO QUESTION 3A*

GROUP ASSIGNMENT	Unsafe Design+	Safe Design+
Group 1 pretest	90.00% (36/40)	10.00% (4/40)
posttest	93.94% (31/33)	6.06% (2/33)
Group 2 pretest	90.14% (64/71)	9.86% (7/71)
posttest	93.18% (41/44)	6.82% (3/44)
Group 3 posttest	94.12% (32/34)	5.88% (2/34)
Group 4 posttest	92.86% (26/28)	7.14% (2/28)

* Question 3A: "Which of the 3 girls' garments do you think is most flammable, that is ignites and burns easily?"

\+ Unsafe Design = alternatives (a) and (c)
Safe Design = alternative (b)

TABLE 4

STATISTICS FOR TABLE 3

GROUPS COMPARED	DEGREES OF FREEDOM	X^2	P-VALUE
Grp 1 pre & Grp 2 pre	1	0.001	0.981
Grp 1 post & Grp 2 post	1	0.018	0.894
Grp 1 pre & Grp 1 post	1	0.372	0.542
Grp 2 pre & Grp 2 post	1	0.316	0.574
Grp 1 post & Grp 3	1	0.001	0.975
Grp 1 post & Grp 4	1	0.029	0.865
Grp 2 post & Grp 3	1	0.028	0.867
Grp 2 post & Grp 4	1	0.003	0.958
Grp 3 & Grp 4	1	0.040	0.841

TABLE 5

GROUP ASSIGNMENT BY RESPONSES TO QUESTION 3B *

GROUP ASSIGNMENT	Unsafe Design +	Safe Design +
Group 1 pretest	84.21% (32/38)	15.79% (6/38)
posttest	93.55% (29/31)	6.45% (2/31)
Group 2 pretest	89.19% (66/74)	10.81% (8/74)
posttest	89.13% (41/46)	10.87% (5/46)
Group 3 posttest	87.88% (29/33)	12.12% (4/33)
Group 4 posttest	92.59% (25/27)	7.41% (2/27)

* Question 3B: "Which of the 3 boys' garments do you think is most flammable, that is ignites and burns easily?"

\+ Unsafe Design = alternatives (a) and (c)
Safe Design = alternative (b)

TABLE 6

STATISTICS FOR TABLE 5

GROUPS COMPARED	DEGREES OF FREEDOM	X^2	P-VALUE
Grp 1 pre & Grp 2 pre	1	0.569	0.451
Grp 1 post & Grp 2 post	1	0.437	0.508
Grp 1 pre & Grp 1 post	1	1.452	0.228
Grp 2 pre & Grp 2 post	1	0.000	0.992
Grp 1 post & Grp 3	1	0.605	0.437
Grp 1 post & Grp 4	1	0.021	0.886
Grp 2 post & Grp 3	1	0.030	0.863
Grp 2 post & Grp 4	1	0.235	0.628
Grp 3 & Grp 4	1	0.040	0.841

correctly on the posttest. This may indicate that the videotape was slightly successful in increasing consumers' knowledge of the flammability of children's sleepwear. It may, however, be attributable simply to subject attrition. The proportion of group 2 respondents who answered correctly increased from 90.1% (64/71) on the pretest to 93.2 % (41/45) on the posttest. This increase may be attributable to testing or, again, subject attrition. Though the differences are minimal, the proportion of respondents who answered correctly was consistently higher in the treated groups (94.1 and 93.9%) than in the non-treated groups (93.2 and 92.9%). This also suggests that the videotape may have had a very slight, yet positive effect on the participants' knowledge of children's sleepwear flammability.

To determine the extent to which subject attrition may have confounded the results, frequency distributions comparing the responses of those pretested respondents who responded to both the pre- and the posttest and those who responded only to the pretest, were calculated for questions 2A, 2B, 3A, 3B and 4 (see Appendix N.) Chi-square tests of independence revealed no significant differences in consumers' knowledge of clothing flammability nor in their preferences for styles of children's sleepwear between those pretested consumers who responded to both tests and those who responded to the

pretest only. In fact, 15 of the 20 p-values calculated were above p=0.70, thus suggesting that the groups were highly similar. Hence, it appears that subject attrition was random and not attributable to such factors as embarassment or lack of confidence in one's clothing flammability knowledge.

A small increase in the proportion of group 1 respondents who answered question 3B (boys' garments) correctly was observed between the pretest (84.2% or 32/38) and the posttest (93.6% or 29/31). This may be attributable to a positive effect of the videotape. The same pattern of the treated groups having the highest proportions of correct responses as was noticed with question 3A was not observed with question 3B. This may be because the differences in the looseness or flowingness of boys' sleepwear garments are much more subtle and therefore much more difficult to discern.

When the responses were collapsed to the categories "safe choice" and "unsafe choice" as determined by the new government regulations, for the girls' garments, only 29 of 111 pretested respondents (26.1%) correctly identified the unsafe choice. Eighteen of 62 posttest-only respondents (29%) identified the unsafe girls' choice as the most flammable. In the case of the boys' sleepwear garments, only 31 of 112 pretested respondents (27.7%) correctly

identified the unsafe choice and 17 of 60 posttest-only respondents (28.3%) identified the unsafe choice as the most flammable. Tables 7 and 9 present the frequency distributions of the responses to questions 3A and 3B respectively, while Tables 8 and 10 provide the Chi-square statistics, degrees of freedom and p-values resulting from the group comparisons.

Group 2's proportion of correct responses in the pretest was noticeably higher than group 1's in both questions 3A and 3B. When the two groups were compared using Chi-square analysis, the resulting p-values (p=0.014 for 3A and p=0.014 for 3B) were very low, thus indicating that the pretest groups were dissimilar in their ability to identify the most flammable children's sleepwear garments. Small increases in the proportion of respondents who correctly identified the unsafe choice were observed between the pre- and posttest for both groups 1 and 2. Hence the low p-values which arose from the comparison of these groups' posttest responses to 3A and 3B (p=0.020 and p=0,012) are more likely attributable to the dissimilarity between the two groups than to any effect of the videotape.

The small increases observed in the proportion of correct responses to questions 3A and 3B between the pretest and the posttest in group 1 may be attributable to a positive impact of the videotape or simply subject attrition. Testing or subject attrition may have

TABLE 7

GROUP ASSIGNMENT BY RESPONSES TO QUESTION 3A*

GROUP ASSIGNMENT	Unsafe Choice+	Safe Choice+
Group 1 pretest	12.50% (5/40)	87.50% (35/40)
posttest	18.18% (6/33)	81.82% (27/33)
Group 2 pretest	33.80% (24/71)	66.20% (47/71)
posttest	43.18% (19/44)	56.82% (25/44)
Group 3 posttest	29.41% (10/34)	70.59% (24/34)
Group 4 posttest	28.57% (8/28)	71.43% (20/28)

* Question 3A: "Which of the 3 girls' garments do you think is most flammable, that is ignites and burns easily?

\+ Unsafe Choice = alternative (a)
Safe Design = alternatives (b) and (c)

TABLE 8

STATISTICS FOR TABLE 7

GROUPS COMPARED	DEGREES OF FREEDOM	X^2	P-VALUE
Grp 1 pre & Grp 2 pre	1	6.016	0.014
Grp 1 post & Grp 2 post	1	5.375	0.020
Grp 1 pre & Grp 1 post	1	0.456	0.499
Grp 2 pre & Grp 2 post	1	1.021	0.312
Grp 1 post & Grp 3	1	1.162	0.281
Grp 1 post & Grp 4	1	0.925	0.336
Grp 2 post & Grp 3	1	1.557	0.212
Grp 2 post & Grp 4	1	1.558	0.212
Grp 3 & Grp 4	1	0.005	0.942

TABLE 9

GROUP ASSIGNMENT BY RESPONSES TO QUESTION 3B*

GROUP ASSIGNMENT	Unsafe Choice+	Safe Choice+
Group 1 pretest	13.16% (5/38)	86.84% (33/38)
posttest	16.13% (5/31)	83.87% (26/31)
Group 2 pretest	35.14% (26/74)	64.86% (48/74)
posttest	43.48% (20/46)	56.52% (26/46)
Group 3 posttest	27.27% (9/33)	72.73% (24/33)
Group 4 posttest	29.63% (8/27)	70.37% (19/27)

* Question 3B: "Which of the 3 boys' garments do you think is most flammable, that is ignites and burns easily?"

\+ Unsafe Choice = alternative (a)
Safe Choice = alternatives (b) and (c)

TABLE 10

STATISTICS FOR TABLE 9

GROUPS COMPARED	DEGREES OF FREEDOM	X^2	P-VALUE
Grp 1 pre & Grp 2 pre	1	6.058	0.014
Grp 1 post & Grp 2 post	1	6.318	0.012
Grp 1 pre & Grp 1 post	1	0.122	0.727
Grp 2 pre & Grp 2 post	1	0.835	0.361
Grp 1 post & Grp 3	1	1.161	0.281
Grp 1 post & Grp 4	1	1.513	0.219
Grp 2 post & Grp 3	1	2.172	0.141
Grp 2 post & Grp 4	1	1.380	0.240
Grp 3 & Grp 4	1	0.041	0.840

confounded group 2's responses to questions 3A and 3B andtherefore may be the reason for the observed increases in the proportion of correct responses.

Clearly the contrast between the proportions of participants who correctly identified an unsafe design as the most flammable (84.2 - 94.1%) and the proportions of those who correctly identified an unsafe choice as the most flammable (12.5 - 43.5%) indicates that, while the participants are able to determine the most flammable designs of children's sleepwear garments, they are not able to identify the most flammable garment correctly once fibre content is considered. There appears to be a strong misconception that polyester is more flammable than cotton. Though some small, positive impacts on the consumers' knowledge of children's sleepwear flammability were observed after exposure to the videotape, none were significant. Therefore, the data do not support the rejection of hypothesis one: 'There will be no difference in consumers' knowledge of children's sleepwear flammability between those who have seen the CCAC videotape and those who have not'.

4.3.1.2 Knowledge of Action Children should Take When Clothing Catches Fire

The participants' responses to the open-ended question 4 "What can you teach your children to do if their clothing

catches fire?" provided the measurement of their knowledge of the appropriate/recommended action in this circumstance. The responses were classified into the following seven categories:

a) Stop, drop and roll

b) Stop, drop and roll covering head (advocated in the videotape)

c) Smother by wrapping self in rug, etc.

d) Don't run

e) Immerse self in water

f) Call for help

g) Remove clothing

Table 11 presents the proportions of these responses according to treatment groups.

It is important to note that if a participant's response was to "roll in something", be it a blanket, rug, coat or whatever, this was coded as (c) "smother by wrapping self in rug, etc." rather than as (a) "stop, drop and roll". Though this distinction may seem arbitrary, it is justified because the inclusion of a garment or some kind of textile product complicates the 'stop, drop and roll' rule, perhaps rendering it too confusing for a child but certainly making it longer to perform. This could lead to an increase in the severity and extent of the burn injuries sustained.

Since (a) "stop, drop and roll" and (b) "stop, drop and

TABLE 11

RESPONSES TO QUESTION 4* BY GROUP ASSIGNMENT

RESPONSE CATEGORY	Group 1+ Pre	Group 1+ Post	Group 2 Pre	Group 2 Post	Group 3+ Post	Group 4 Post
Stop, drop & roll	35	23	70	44	20	29
	83.3%	65.7%	86.4%	91.7%	58.8%	93.5%
Stop, drop & roll, covering head	0	12	0	0	14	0
	0%	34.3%	0%	0%	41.2%	0%
Smother by wrapping self in rug, etc.	17	1	33	17	3	13
	40.5%	2.8%	40.7%	35.4%	8.8%	41.9%
Don't run	2	1	8	4	2	6
	4.8%	2.8%	9.9%	8.3%	5.9%	19.4%
Immerse self in water	1	0	4	0	0	2
	2.4%	0%	4.9%	0%	0%	6.5%
Call for help	4	0	6	2	0	3
	9.5%	0%	7.4%	4.2%	0%	9,7%
Remove clothing	2	0	2	2	0	1
	4.8%	0%	2.5%	4.2%	0%	3.2%
	n=42	n=35	n=81	n=48	n=34	n=31

Note: Some respondents provided more than one response.

* Question 4: "What can you teach your children to do if their clothing catches fire?"

\+ Groups 1 and 3 received the videotape treatment

roll, covering head" are the most appropriate responses, as well as being the strategies suggested by the videotape, statistical analysis was performed only on these categories. Tables 12 and 14 provide frequency distributions of these responses and Tables 13 and 15 provide the Chi-square statistics, degrees of freedom and p-values resulting form the group comparisons.

Without treatment, 83.3 to 93.6% of the respondents answered 'stop, drop androll'. This very large majority suggests that the existing programs disseminating the 'stop, drop and roll' rule for extinguishing burning clothing have been very effective. Further, the respondents' membership in an organization and/or the fact that the organizations approached have speakers on child-related topics may make the respondents more likely to know about things like the 'stop, drop and roll' rule.

Without treatment, however, none of the respondents provided the enhanced version, 'stop, drop and roll, covering head', which was presented in the videotape. After exposure to the videotape, 34.3% (12/35) of group 1 (pretest/posttest) and 41.2% (14/34) of group 3 (posttest-only), responded 'stop, drop and roll, covering head'.

Though a large majority of the participants already knew the 'stop, drop and roll' rule, there was a

TABLE 12

GROUP ASSIGNMENT BY DID/DID NOT RESPOND 'STOP DROP & ROLL'

GROUP ASSIGNMENT	DID RESPOND	DID NOT RESPOND
Group 1 Pretest	83.33% (35/42)	16.67% (7/42)
Posttest	65.71% (23/35)	34.29% (12/35)
Group 2 Pretest	86.42% (70/81)	13.58% (11/81)
Posttest	91.67% (44/48)	8.33% (4/48)
Group 3 Posttest	58.82% (20/34)	41.18% (14/34)
Group 4 Posttest	93.55% (29/31)	6.45% (2/31)

TABLE 13

STATISTICS FOR TABLE 12

GROUPS COMPARED	DEGREES OF FREEDOM	X^2	P-VALUE
Grp 1 pre & Grp 2 pre	1	0.211	0.646
Grp 1 post & Grp 2 post	1	8.761	0.003
Grp 1 pre & Grp 1 post	1	3.189	0.074
Grp 2 pre & Grp 2 post	1	0.807	0.369
Grp 1 post & Grp 3	1	0.349	0.555
Grp 1 post & Grp 4	1	7.621	0.006
Grp 2 post & Grp 3	1	12.531	0.000
Grp 2 post & Grp 4	1	0.095	0.758
Grp 3 & Grp 4	1	10.537	0.001

TABLE 14

GROUP ASSIGNMENT BY DID/DID NOT RESPOND

'STOP, DROP & ROLL COVERING HEAD'

GROUP ASSIGNMENT		DID RESPOND	DID NOT RESPOND
Group 1	Pretest	0.00% (0/42)	100.00% (42/42)
	Posttest	34.29% (12/35)	65.71% (23/35)
Group 2	Pretest	0.00% (0/81)	100.00% (81/81)
	Posttest	0.00% (0/48)	100.00% (48/48)
Group 3	Posttest	41.18% (14/34)	58.82% (20/34)
Group 4	Posttest	0.00% (0/31)	100.00% (31/31)

TABLE 15

STATISTICS FOR TABLE 14

GROUPS COMPARED	DEGREES OF FREEDOM	X^2	P-VALUE
Grp 1 pre & Grp 2 pre	-	-	-
Grp 1 post & Grp 2 post	1	19.239	0.000
Grp 1 pre & Grp 1 post	1	17.058	0.000
Grp 2 pre & Grp 2 post	-	-	-
Grp 1 post & Grp 3	1	0.349	0.555
Grp 1 post & Grp 4	1	12.990	0.000
Grp 2 post & Grp 3	1	23.834	0.000
Grp 2 post & Grp 4	1	-	-
Grp 3 & Grp 4	1	16.269	0.000

significant difference in consumers' knowledge of action children should take when their clothing catches fire (p=0.00) after viewing the videotape. A significant proportion learned the enhanced version of the 'stop, drop and roll' rule. Therefore, hypothesis two, 'There will be no significant difference in consumers' knowledge of action children should take when their clothing catches fire between those who have seen the CCAC videotape and those who have not' was rejected.

4.3.1.3 Preferences for Styles of Children's Sleepwear

A measurement of the participants' preferences for styles of children's sleepwear was provided by their responses to questions 2A and 2B which asked the participants to choose from among three garments the one they would most likely buy for (A) their daughter(s) and (B) their son(s). The participants' responses to these questions are presented in Tables 16 and 17.

The majority of respondents, regardless of treatment, preferred the least flammable style of girls' sleepwear, the cotton/polyester polo pyjamas. Sixty-three (70%) of the 90 respondents who received the pretest chose the polo pyjama while 23 (25.6%) preferred the long, cotton flannelette nightgown, the most flammable alternative. Very few, 4 (4%), of the pretest respondents preferred the

TABLE 16

GROUP ASSIGNMENT BY STYLE OF GIRLS' SLEEPWEAR PREFERRED

GROUP ASSIGNMENT	(a) long, cotton flannelette nightgown	(b) cotton/polyester polo pyjama	(c) long, cotton flannelette nightgown
Group 1			
Pretest	34.38% (11/32)	62.50% (20/32)	3.13% (1/32)
Posttest	28.57% (8/28)	71.43% (20/28)	0.00% (0/28)
Group 2			
Pretest	20.69% (12/58)	74.14% (43/58)	5.17% (3/58)
Posttest	25.71% (9/35)	74.29% (26/35)	0.00% (0/35)
Group 3			
Posttest	33.33% (7/21)	61.90% (13/21)	4.76% (1/21)
Group 4			
Posttest	36.00% (9/25)	64.00% (16/25)	0.00% (0/25)

TABLE 17

GROUP ASSIGNMENT BY STYLE OF BOYS' SLEEPWEAR PREFERRED

GROUP ASSIGNMENT	(a) long, cotton flannelette tailored pyjama	(b) cotton/polyester polo pyjama	(c) long, cotton flannelette tailored pyjama
Group 1			
Pretest	25.81% (8/31)	70.97% (22/31)	3.23% (1/31)
Posttest	15.38% (4/26)	84.62% (22/26)	0.00% (0/26)
Group 2			
Pretest	24.59% (15/61)	67.21% (41/61)	8.20% (5/61)
Posttest	19.44% (7/36)	77.78% (28/36)	2.78% (1/36)
Group 3			
Posttest	37.50% (9/24)	58.33% (14/24)	4.17% (1/24)
Group 4			
Posttest	30.00% (6/20)	70.00% (14/20)	0.00% (0/20)

long, polyester flannelette nightgown. For those 49 who responded to the posttest after seeing the videotape (groups 1 and 3), 33 (67.3%) preferred the polo pyjama while 15 (30.6%) chose the cotton nightgown and only one (2%) picked the polyester nightgown. Of the 60 posttest respondents who did not see the videotape (groups 2 and 4), 42 (70%) chose the polo pyjama and 18 (30%) picked the cotton nightgown while none preferred the polyester nightgown.

For the boys' sleepwear styles, again the majority of the respondents preferred the polo pyjamas, the least flammable boys' style, regardless of their treatment. Of the 92 pretested respondents, 63 (68.5%) preferred the polo pyjama while 23 (25%) selected the cotton flannelette tailored pyjama (the most flammable boys' style) and only six (6.5%) picked the polyester flannelette tailored pyjama. For those 50 who responded to the posttest after viewing the videotape (groups 1 and 3), 36 (72%) chose the polo pyjama, 13 (26%) preferred the cotton tailored pyjama and only one (2%) selected the polyester tailored pyjamas. Of the 56 posttest repondents who did not see the videotape (groups 2 and 4), 42 (75%) preferred the polo pyjama, 13 (23.2%) the cotton tailored pyjamas and only one (1.8%) the polyester tailored pyjamas.

Again, low expected cell frequencies rendered the Chi-

square statistics invalid so the response categories were collapsed to "safe" versus "unsafe designs" and then "safe" versus "unsafe choices" as was previously explained.

When the response categories were reduced to "safe" versus "unsafe designs", the majority (58.3% to 84.6%) of the respndents chose a safe design for both boys and girls, regardless of treatment. Tables 18 and 20 provide the frequency distributions of sleepwear preferred for girls and boys respectively. Tables 19 and 21 provide the Chi-square statistics, degrees of freedom and p-values resulting from the group comparisons.

A slight increase in the proportion of respondents choosing a safe design of girls' sleepwear as their preferred style was noticed in group 1 between the pretest (62.5% or 20/32) and the posttest (71.4% or 20/28). Although this increase may indicate a positive effect on consumers' preferences for girls' sleepwear styles, it is insignificant ($p=0.464$). The consistency of the proportion of group 2 respondents choosing safe versus unsafe designs suggests that testing had no effect on the respondents' preferences ($p=0.987$). The remaining p-values indicate that the videotape had very little, if any effect on consumers' preferences for girls' sleepwear styles.

The proportion of respondents preferring a safe design

TABLE 18

GROUP ASSIGNMENT BY STYLE OF GIRLS' SLEEPWEAR PREFERRED

GROUP ASSIGNMENT	Unsafe Design +	Safe Design +
Group 1 Pretest	37.50% (12/32)	62.50% (20/32)
Posttest	28.57% (8/28)	71.43% (20/28)
Group 2 Pretest	25.86% (15/58)	74.14% (43/58)
Posttest	25.71% (9/35)	74.29% (26/35)
Group 3 Posttest	38.10% (8/21)	61.90% (13/21)
Group 4 Posttest	36.00% (9/25)	64.00% (16/25)

+ Unsafe Design = alternatives (a) and (c)
  Safe Design = alternative (b)

TABLE 19

STATISTICS FOR TABLE 18

GROUPS COMPARED	FREEDOM	X^2	P-VALUE
Grp 1 pre & Grp 2 pre	1	1.330	0.249
Grp 1 post & Grp 2 post	1	0.064	0.800
Grp 1 pre & Grp 1 post	1	0.536	0.464
Grp 2 pre & Grp 2 post	1	0.000	0.987
Grp 1 post & Grp 3	1	0.495	0.482
Grp 1 post & Grp 4	1	0.335	0.563
Grp 2 post & Grp 3	1	0.952	0.329
Grp 2 post & Grp 4	1	0.735	0.391
Grp 3 & Grp 4	1	0.022	0.883

TABLE 20

GROUP ASSIGNMENT BY STYLE OF BOYS' SLEEPWEAR PREFERRED

GROUP ASSIGNMENT	Unsafe Design +	Safe Design +
Group 1 Pretest	29.03% (9/31)	70.97% (22/31)
Posttest	15.38% (4/26)	84.62% (22/26)
Group 2 Pretest	32.79% (20/61)	67.21% (41/61)
Posttest	22.22% (8/36)	77.78% (28/36)
Group 3 Posttest	41.67% (10/24)	58.33% (14/24)
Group 4 Posttest	30.00% (6/20)	70.00% (14/20)

+ Unsafe Design = alternatives (a) and (c)
  Safe Design = alternative (b)

TABLE 21

STATISTICS FOR TABLE 20

GROUPS COMPARED	FREEDOM	X^2	P-VALUE
Grp 1 pre & Grp 2 pre	1	0.134	0.714
Grp 1 post & Grp 2 post	1	0.452	0.501
Grp 1 pre & Grp 1 post	1	1.496	0.221
Grp 2 pre & Grp 2 post	1	1.231	0.267
Grp 1 post & Grp 3	1	4.276	0.039
Grp 1 post & Grp 4	1	1.419	0.234
Grp 2 post & Grp 3	1	2.593	0.107
Grp 2 post & Grp 4	1	0.415	0.520
Grp 3 & Grp 4	1	0.642	0.423

of boys' sleepwear garments increased on the posttest for both group 1 and group 2. In group 1, 70.9% (22/31) preferred the safe design of the boys' sleepwear on the pretest, whereas 84.6% (22/26) preferred the safe design after viewing the videotape. This increase however, is insignificant (p=0.221). The increase from 67.2% (41/61) on the pretest to 77.8% (28/36) on the posttest of respondents preferring the safe design in group 2 suggests the results may have been confounded by testing or perhaps subject attrition. The remaining p-values suggest that the videotape had little or no effect on consumers' preferences for styles of boys' sleepwear.

When the response categories were collapsed to "safe" versus "unsafe choices" using the new federal regulations as criteria, it was observed again that the majority of respondents preferred safe styles of sleepwear for both boys and girls (62.5 to 84.6%). Tables 22 and 24 present the frequency distributions of preferred styles of girls' and boys' sleepwear respectively, while Tables 23 and 25 provide the Chi-square statistics, degrees of freedom and p-values resulting from the group comparisons.

There is a slight increase in the proportion of group 1 respondents preferring a safe choice of girls' sleepwear on the posttest which might indicate a slight, positive effect of the videotape on consumers' preferences for girls'

TABLE 22

GROUP ASSIGNMENT BY STYLE OF GIRLS' SLEEPWEAR PREFERRED

GROUP ASSIGNMENT	Unsafe Choice +	Safe Choice +
Group 1 Pretest	34.38% (11/32)	65.63% (21/32)
Posttest	28.57% (8/28)	71.43% (20/28)
Group 2 Pretest	20.69% (12/58)	79.31% (46/58)
Posttest	25.71% (9/35)	74.29% (26/35)
Group 3 Posttest	33.33% (7/21)	66.67% (14/21)
Group 4 Posttest	36.00% (9/25)	64.00% (16/25)

+ Unsafe Choice = alternative (a)
  Safe Choice = alternatives (b) and (c)

TABLE 23

STATISTICS FOR TABLE 22

GROUPS COMPARED	FREEDOM	X^2	P-VALUE
Grp 1 pre & Grp 2 pre	1	2.030	0.154
Grp 1 post & Grp 2 post	1	0.064	0.800
Grp 1 pre & Grp 1 post	1	0.232	0.630
Grp 2 pre & Grp 2 post	1	0.315	0.574
Grp 1 post & Grp 3	1	0.128	0.720
Grp 1 post & Grp 4	1	0.335	0.563
Grp 2 post & Grp 3	1	0.373	0.541
Grp 2 post & Grp 4	1	0.735	0.391
Grp 3 & Grp 4	1	0.036	0.850

TABLE 24

GROUP ASSIGNMENT BY STYLE OF BOYS' SLEEPWEAR PREFERRED

GROUP ASSIGNMENT	Unsafe Choice +	Safe Choice +
Group 1 Pretest	25.81% (8/31)	74.19% (23/31)
Posttest	15.38% (4/26)	84.62% (22/26)
Group 2 Pretest	24.59% (15/61)	75.41% (46/61)
Posttest	19.44% (7/36)	80.56% (29/36)
Group 3 Posttest	37.50% (9/24)	62.50% (15/24)
Group 4 Posttest	30.00% (6/20)	70.00% (14/20)

+ Unsafe Choice = alternative (a)
  Safe Choice = alternatives (b) and (c)

TABLE 25

STATISTICS FOR TABLE 24

GROUPS COMPARED	FREEDOM	X^2	P-VALUE
Grp 1 pre & Grp 2 pre	1	0.016	0.899
Grp 1 post & Grp 2 post	1	0.170	0.680
Grp 1 pre & Grp 1 post	1	0.924	0.336
Grp 2 pre & Grp 2 post	1	0.342	0.559
Grp 1 post & Grp 3	1	3.172	0.075
Grp 1 post & Grp 4	1	1.419	0.234
Grp 2 post & Grp 3	1	2.401	0.121
Grp 2 post & Grp 4	1	0.804	0.370
Grp 3 & Grp 4	1	0.273	0.601

sleepwear. The decrease in the proportion of group 2 respondents preferring a safe choice of girls' sleepwear is possibly the result of subject attrition.

A slight increase in the proportion of group 1 respondents preferring a safe choice of boys' sleepwear was also observed on the posttest. Again this may indicate a slight, positive effect of the videotape on consumers' preferences for boys' sleepwear. However, the difference is not significant ($p=0.336$). The slight increase in the proportion of group 2 respondents preferring a safe choice of boys' sleepwear may either be attributable to confounding by testing or subject attrition.

Though some small differences in consumers' preferences for children's sleepwear garments were noticed after exposure to the videotape, they were all insignificant. Further confounding variables such as subject attrition or testing may have been responsible. Therefore, the data do not support the rejection of hypothesis three, 'There will be no difference in consumers' preferences for styles of children's sleepwear between those who have seen the videotape and those who have not'.

The apparent consumer preference for the least flammable styles of children's sleepwear may suggest that regulatory and/or educational strategies intended to reduce

the incidence of sleepwear burn injuries in children, are not necessary. However, since consumers' knowledge of the flammability of children's sleepwear was observed to be inadequate, it is doubtful that the subjects' preferences for flame retardant sleepwear are knowing, but rather, attributable to other garment attributes, such as comfort, ease of care or durability, or perhaps simply to chance.

4.3.1.4 Demographic Variables

A statistical analysis was performed to determine whether there were any differences in consumers' clothing flammability knowledge after seeing the videotape and in their preferences for children's sleepwear with the demographic variables total number of children, number of children under thirteen, level of education, years of education, age, sex, and residence. No significant differences were found. The sample drawn was not large enough to ensure sufficiently high expected cell frequencies, so most of the Chi-square test statistics were invalid. No discernible patterns were observed.

4.3.2 Poster Presentation Experiment Results

Unfortunately, because only one participant out of 97 read the CCAC/CPS leaflet and only two out of 97 participants read the alternative leaflet, differences in

consumers' knowledge of children's sleepwear flammability, in their knowledge of action children should take when their clothing catches fire and in their preferences for children's sleepwear with reading the leaflet could not be examined. Tables 26 through 31 present the frequency distributions of the participants' responses to questions 3A, 3B, 4, 2A and 2B, broken down by treatment.

Though the data did not permit the testing of hypotheses 4 through 9, the descriptive statistics of Tables 26 to 31 do provide useful insights as to the present state of consumers' knowledge of clothing flammability and their preferences for children's sleepwear. The participants' knowledge of children's sleepwear flammability will be presented first, followed by their knowledge of the action children should take when their clothing catches fire and the participants' preferences for children's sleepwear styles. The attention the poster presentations were able to attract will then be compared and discussed. Further, the influence of the control variables will be presented.

4.3.2.1 Knowledge of Children's Sleepwear Flammability

Fewer than 28% of the poster experiment participants were able to correctly identify the most flammable of the three children's sleepwear garments provided, that is alternative (a) (see Tables 26 & 27). If only design, and

TABLE 26

POSTER PRESENTATION TREATMENT BY RESPONSES TO QUESTION 3A *

TREATMENT	(a) long, cotton flannelette nightgown	(b) cotton/polyester polo pyjama	(c) long, polyester flannelette nightgown
Did not read CCAC/CPS presentation	27.50% (22/80)	15.00% (12/80)	57.50% (46/80)
Did read CCAC/CPS presentation	0.00% (0/ 1)	0.00% (0/ 1)	100.00% (1/ 1)
Did not read ALTERNATIVE presentation	26.25% (21/80)	11.25% (9/80)	62.50% (50/80)
Did read ALTERNATIVE presentation	0.00% (0/ 2)	0.00% (0/ 2)	100.00% (2/ 2)
TOTALS	26.38% (43/163)	12.88% (21/163)	60.74% (99/163)

* Question 3A: "Which of the three girls' garments do you think is most flammable, that is ignites and burns easily?"

TABLE 27

POSTER PRESENTATION TREATMENT BY RESPONSES TO QUESTION 3B *

TREATMENT	(a) long, cotton flannelette tailored pyjama	(b) cotton/polyester polo pyjama	(c) long, polyester flannelette tailored pyjama
Did not read CCAC/CPS presentation	27.50% (22/80)	21.25% (17/80)	51.25% (41/80)
Did read CCAC/CPS presentation	0.00% (0/ 1)	0.00% (0/ 1)	100.00% (1/ 1)
Did not read ALTERNATIVE presentation	28.57% (22/77)	10.39% (8/77)	61.04% (47/77)
Did read ALTERNATIVE presentation	0.00% (0/ 2)	0.00% (0/ 2)	100.00% (2/ 2)
TOTALS	27.50% (44/160)	15.63% (25/160)	56.87% (91/160)

* Question 3B: "Which of the three boys' garments do you think is most flammable, that is ignites and burns easily?"

TABLE 28

POSTER PRESENTATION TREATMENT BY DID/DID NOT RESPOND *

'STOP, DROP & ROLL'

TREATMENT	DID RESPOND 'Stop, Drop & Roll'	DID NOT RESPOND 'Stop, Drop & Roll'
Did not read CCAC/CPS presentation	78.13% (75/96)	21.88% (21/96)
Did read CCAC/CPS presentation	100.00% (1/ 1)	0.00% (0/ 1)
Did not read ALTERNATIVE presentation	87.91% (80/91)	12.09% (11/91)
Did read ALTERNATIVE presentation	100.00% (2/ 2)	0.00% (0/ 2)
TOTALS	83.16% (158/190)	16.84% (32/190)

* Question 4: "What can you teach your child to do if their clothing catches fire?"

TABLE 29

POSTER PRESENTATION TREATMENT BY DID/DID NOT RESPOND *

'STOP, DROP & ROLL, COVERING HEAD'

TREATMENT	DID RESPOND 'Stop, Drop & Roll Covering Head'	DID NOT RESPOND 'Stop, Drop & Roll Covering Head'
Did not read CCAC/CPS presentation	0.00% (0/96)	100.00% (96/96)
Did read CCAC/CPS presentation	0.00% (0/ 1)	100.00% (1/ 1)
Did not read ALTERNATIVE presentation	0.00% (0/91)	100.00% (91/91)
Did read ALTERNATIVE presentation	0.00% (0/ 2)	100.00% (2/ 2)
TOTALS	0.00% (0/190)	100.00% (190/190)

Question 4: "What can you teach your child to do if their clothing catches fire?"

TABLE 30

POSTER PRESENTATION TREATMENT BY RESPONSES TO QUESTION 2A *

TREATMENT	(a) long, cotton flannelette nightgown	(b) cotton/polyester polo pyjama	(c) long, polyester flannelette nightgown
Did not read CCAC/CPS presentation	26.67% (16/60)	58.33% (35/60)	15.00% (9/60)
Did read CCAC/CPS presentation	0.00% (0 / 1)	100.00% (1/ 1)	0.00% (0/ 1)
Did not read ALTERNATIVE presentation	48.33% (29/60)	38.33% (23/60)	13.33% (8/60)
Did read ALTERNATIVE presentation	0.00% (0/ 1)	100.00% (1/ 1)	0.00% (0/ 1)
TOTALS	36.89% (45/122)	49.18% (60/122)	13.93% (17/122)

* Question 2A: "Which one of the three garments shown would you be most likely to buy for your daughter(s), assuming they are all available in appropriate colours, sizes and a similar price range?"

TABLE 31

POSTER PRESENTATION TREATMENT BY RESPONSES TO QUESTION 2B*

TREATMENT	(a) long, cotton flannelette tailored pyjama	(b) cotton/polyester polo pyjama	(c) long, polyester flannelette tailored pyjama
Did not read CCAC/CPS presentation	31.67% (19/60)	60.00% (36/60)	8.33% (5/60)
Did read CCAC/CPS presentation	0.00% (0 / 1)	100.00% (1/ 1)	0.00% (0/ 1)
Did not read ALTERNATIVE presentation	42.19% (27/64)	51.56% (33/64)	6.25% (4/64)
Did read ALTERNATIVE presentation	0.00% (0/ 2)	100.00% (2/ 2)	0.00% (0/ 2)
TOTALS	36.22% (46/127)	56.69% (72/127)	13.93% (9/127)

* Question 2B: "Which one of the 3 garments shown would you be most likely to buy for your son(s), assuming they are all available in appropriate colours, sizes, and a similar price range?"

not fibre content, was considered, then over 84% of all the participants correctly identified the most flammable styles of children's sleepwear, alternatives (a) and (c). This further indicates, as did the videotape experiment, that consumers know that looser, more flowing styles of children's sleepwear are more flammable than tighter, more snugly fitting styles. They are not aware, however, of the role that fibre content plays in determining a garment's flammability. Consumers seem to believe that polyester is more flammable than cotton when, in reality, the opposite is true. In fact, the consumers' misconception about the flammability of polyester may contribute to the high proportion who correctly identified the most flammable sleepwear design. They may have chosen alternative (c) as the most flammable only because it was polyestesr and not considered the design line at all.

4.3.2.2 Knowledge of Action Children Should Take When Their Clothing Catches Fire

Although no respondents provided the response 'stop, drop and roll, covering your head' when asked what they should teach their children to do if their clothing catches fire, more than 78% of the respondents answered 'stop, drop and roll' (see Tables 28 & 29). This indicates that a large majority of consumers have already learned the appropriate course of action to take in case of clothing

fires. One can conclude from this that the existing informational or educational programs disseminating information on the 'stop, drop and roll' rule have been quite successful.

4.3.2.3 Preferences for Styles of Children's Sleepwear

If the response categories were collapsed to a "safe" or "unsafe choice" using the new federal regulations as criteria, over 51% of the respondents preferred safe choices of children's sleepwear, that is alternatives (b) or (c) (see Tables 30 & 31). However, over 36% of all the respondents preferred the most flammable styles of children's sleepwear, a fairly high proportion.

4.3.2.4 Attention Paid to the Poster Presentations

Table 32 provides the proportions of participants who did and did not notice the poster presentations. Although there is not a significant difference between the proportion of participants who noticed the alternative poster ($p=0.706$), it must be noted that the participants may have been exposed to the CCAC/CPS poster presentation previously during prior visits to the pediatrician. In contrast, exposure to the alternative poster presentation was limited only to the visit during which the interview was conducted. Therefore, the fact that similar

TABLE 32

POSTER PRESENTATION TREATMENT BY DID/DID NOT NOTICE

POSTER TREATMENT	Did Notice	Did Not Notice
CCAC/CPS presentation	16.49% (16/97)	83.51% (81/97)
ALTERNATIVE presentation	18.56% (18/97)	81.44% (79/97)

X^2 = 0.143 Degrees of Freedom = 1 P-Value = 0.706

TABLE 33

POSTER PRESENTATION TREATMENT BY DID/DID NOT READ LEAFLET

POSTER TREATMENT	Did Read Leaflet	Did Not Read Leaflet
CCAC/CPS presentation	1.03% (1/97)	98.97% (96/97)
ALTERNATIVE presentation	6.19% (6/97)+	93.81% (91/97)

+ This frequency includes both the number of parents (2) and the number of children (4) who had read the leaflet.

proportions noticed the alternative poster (18/97 or 18.6%) and the CCAC/CPS poster (16/97 or 16.0%) is worthy of further investigation.

The proportions of participants who did and did not read the poster presentation leaflets, grouped by their treatment, are provided in Table 33. Since the alternative poster was designed to attract children's attention, the proportion of children who had read the leaflet was included. More alternative leaflets (6 or 6.2%) were read than CCAC/CPS leaflets (1 or 1%). A total of 43 alternative leaflets (39 English and 4French) were taken during the five days that the poster was on display. In all, even though consumers may have been exposed to the CCAC/CPS poster presentation several times previously, only seven (7.2%) of the participants claimed to have ever read any of the various leaflets displayed on the CCAC/CPS board. Low expected cell frequencies rendered the Chi-square analysis invalid.

There were no significant differences in the posters' ability to attract consumer attention so hypothesis sixteen could not be rejected. However, the alternative poster was noticed and read by more participants than the CCAC/CPS poster, even though the participants were exposed to the alternative poster only once. Further testing, ensuring equal exposure to both presentations is necessary to

investigate this finding further.

4.3.2.5 Demographic Variables

The analysis of the influence of the demographic variables (total number of children, number of children under thirteen, level of education years of education, age and sex) on the effectiveness of the poster presentations could not be done. Since the posters' effectiveness could not be assessed, it was impossible to analyze any influence these variables may have exerted on the effectiveness of the posters. Low expected cell frequencies invalidated many of the Chi-square tests of independence and no discernible patterns between demographic variables and the consumers' current clothing flammability knowledge or preferences for children's sleepwear were detected.

4.3.4 Comparison of the Effectiveness of the Three Educational Strategies

Since so few participants read the poster presentation leaflets, the statistical analysis intended to compare the effectiveness of the three educational strategies was of no value. Hence, hypotheses 13, 14 and 15 could not be tested.

4.4 DISCUSSION

No significant difference in consumers' knowledge of the flammability of children's sleepwear after exposure to the CCAC videotape was observed. The majority of consumers, without any educational treatment, were able to discern that the looser designs of children's sleepwear were the most flammable designs. When the role of fibre content was considered, however, less than one half of the respondents, regardless of treatment, correctly identified the most flammable styles of children's sleepwear.

The consumers' misconceptions regarding the flammability of fibres may lead to some initial confusion and perhaps resistance to the new regulations. Since the new regulations still permit the sale of all the designs of children's sleepwear previously available, only now with certain restrictions on fibre type and fabric construction for some designs, most consumers will probably make minor adjustments in their choice of children's sleepwear according to the new mix of alternatives available. For example, they may compromise preferred fibre content for preferred design, or vice versa, either consciously or unknowingly. Many consumers may not even notice a change in the mix of alternative children's sleepwear garments available. Such would be the case if a consumer already preferred a flame retardant style of

children's sleepwear or if he/she unwittingly modified his/her preferences as a result of the new available mix of children's sleepwear garments.

The failure to improve consumers' knowledge of children's sleepwear flammability is attributable to an oversight in the video program's design. Only the role of design line in determining a garment's flammability, that is its snugness- versus loosenees-of-fit, was mentioned during the videotape. The findings of this study demonstrate that this information is already known by the majority of consumers. The flammability properties of fibres, of which consumers apparently have little knowledge, were not covered by the CCAC videotape.

There was a very significant difference in consumers' knowledge of the action children should take when their clothing catches fire ($p=0.00$, $\alpha=0.05$) after exposure to the CCAC videotape. The proportion of respondents providing the enhanced version of the 'stop, drop and roll' rule, that is the proportion responding 'stop, drop and roll, covering head', increased from 0% on the pretest to 34.3% or 41.2% after exposure to the videotape (see Table 14). Over 83% of the participants, however, were already familiar with the existing 'stop, drop and roll' rule prior to the administration of the videotape (see Table 12).

There were no significant differences in consumers' preferences after exposure to CCAC's videotape. The consumers' ability to identify the most flammable styles of sleepwear when considering only design line and not fibre content, was shown to be quite adequate prior to this educational treatment. Exposure to the videotape did not increase the likelihood of consumers considering this information during the choice process for children's sleepwear. No significant increase in the proportion of consumers choosing "safe designs" of sleepwear was observed. Thus, the videotape failed to convince consumers to consider flammability as a salient and determinant attribute when purchasing sleepwear for children. Consumers may have perceived the idea of considering flammability when evaluating children's sleepwear garments as irrelevant since, as Wall and Gallagher (1983) determined, they are unaware of the potential hazard of burn injury that children's sleepwear poses. Thus, they may have rejected the information during the yielding/acceptance stage of their information processing. Further, the idea of children suffering clothing burn injuries may have triggered fear control responses. As a result, such defence mechanisms as denial or repression may possibly have inhibited the danger control responses of learning about the flammability of children's sleepwear and how to reduce the risk of clothing burn injury, that is considering flammability as a determinant attribute of

children's sleepwear.

No significant difference in consumers' ability to identify the most flammable styles of sleepwear when considering the role of fibre content, was observed after exposure to the CCAC videotape. Since the videotape had no impact on the consumers' understanding of clothing flammability (cognitive level), it follows from the notion of the hierarchy of effects, that it would also fail to produce positive changes at the affective and/or behavioural level with respect to children's sleepwear.

The majority of the consumers, over 58%, regardless of whether they watched the CCAC video, were found to prefer the polo pyjamas, which are the safest of all the alternatives provided (see Tables 16 & 17). The extent to which this is the result of demand effects, that is respondents selecting the response they think is 'right' or 'best' given the circumstances of the questionnaire rather than indicating their actual choice, is unknown. However, 42.4% of the participants only had children under the age of four and 53.7% of all the consumers' children were infants or toddlers under four years of age. The most popular style of sleepwear for this age group of children is sleepers. Thus, the consumers may have chosen the polo pyjamas simply because they were the alternative which most closely resembled sleepers. When their children become

older, the consumers' preferences for children's sleepwear may change and gender differences may also become more apparent.

The data did not permit the direct evaluation of the poster presentations' effectiveness in increasing consumers' knowledge of children's sleepwear flammability and their knowledge of the action children should take when their clothing catches fire, nor their effectiveness in altering consumers' preferences for children's sleepwear garments. However, the poster presentations' ability to attract consumer attention was evaluated.

The CCAC/CPS poster was found not to be very effective in attracting consumers' attention. Only 16.5% of the participants had even noticed the presentation and only seven out of the 97 people interviewed had actually read any of the provided leaflets. This failure to attract consumer attention may be attributable to several factors. For instance, the CCAC/CPS poster presentation lacked physical salience. Being a poster it is a static stimulus. Further, the poster is not particularly colourful. The CCAC and CPS logos as well as the newsletter format of the leaflets convey a certain amount of formality and authoritativeness. This may have alienated certain consumers by suggesting that the information presented was quite technical or perhaps by seeming pushy.

Attention is one of the first stages in consumer information processing. If consumers' attention is not attracted and/or maintained, no further processing of information will be carried out. Thus, no changes in knowledge, attitudes and/or behaviour will occur. Since the CCAC/CPS poster presentation was found to have minimal success in attracting and maintaining the consumers' attention, it follows that it is ineffective in increasing consumers' clothing flammability knowledge as well as in altering consumers' preferences for children's sleepwear garments.

The alternative poster presentation was found to be slightly better in attracting and maintaining consumer attention than the CCAC/CPS presentation. Either the increased colourfulness, the less formal format, and/or the active involvement the presentation encouraged may be responsible for this improvement. The alternative presentation, however, also failed to attract substantial consumer attention during this study. Thus, the alternative poster presentation was also found to be ineffective in increasing consumers' clothing flammability knowledge and in modifying consumer preferences for children's sleepwear.

CHAPTER 5

SUMMARY & CONCLUSIONS

5.1 INTRODUCTION

The objectives of this study were to evaluate three consumer educational strategies with respect to their effectiveness in increasing consumers' clothing flammability knowledge and their effectiveness in altering consumers' preferences and purchase intentions for children's sleepwear. The three educational strategies evaluated were CCAC's videotape, the CCAC/CPS poster presentation and an alternative poster presentation designed by the author.

To assess the effectiveness of the CCAC videotape, the Solomon four-group quasi-experimental design comprising pre- and posttest measurements as well as static group comparisons was implemented using members of organized clubs and special interest groups. A brief, written questionnaire designed to assess consumers' knowledge of children's sleepwear flammability, their knowledge of action children should take when their clothing catches fire and the consumers' preferences for children's sleepwear garments, was administered before and after exposure/non-exposure to the videotape. Frequency

distributions of the participants' responses were developed and Chi-square tests were performed to determine if there were significant differences among cell frequencies.

To evaluate the effectiveness of the poster presentations, interviews were conducted with parents and caregivers at pediatricians' offices where the posters were on display. During the interview, the participants were also asked to complete the same questionnaire as was used in the evaluation of the videotape. Frequency distributions of the participants' responses were constructed and Chi-square test statistics were calculated to determine whether there were significant differences among cell frequencies.

The following chapter will first present the conclusions of the study. Next, the study's limitations will be outlined followed by a discussion of its implications and suggestions for future research.

5.2 CONCLUSIONS

The following conclusions were drawn from the study:

1) The CCAC videotape did not improve consumers' knowledge of children's sleepwear flammability.
2) The CCAC videotape did improve consumers'

knowledge of the action children should take when their clothing catches fire.

3) The CCAC videotape had no effect on consumers' preferences for styles of children's sleepwear.

4) The CCAC/CPS and the alternative poster presentations were equally ineffective in attracting consumer attention.

Although significant differences were found in the consumers' knowledge of the action children should take when their clothing catches fire after they had seen the videotape, the majority of consumers already knew the 'stop, drop and roll' rule for extinguishing burning clothing. Expanding this rule to 'stop, drop and roll, covering your head' therefore is not a major achievement. The 'stop, drop and roll' rule has long been accepted as effective and adequate. Although covering one's head certainly improves the effectiveness of this action by inhibiting the ignition and/or burning of one's hair, it does complicate the rule. This may render the rule more confusing and difficult to perform, as well as more difficult to remember.

As no significant differences in consumers' knowledge of children's sleepwear flammability or in consumers' preferences for styles of children's sleepwear were

observed after exposure to the CCAC videotape, it must be concluded that the videotape was ineffective in increasing consumers' clothing flammability knowledge as well as in modifying their preferences and purchase intentions for children's sleepwear.

This is not to say that the strategy is totally without merit. Its effectiveness with respect to children's knowledge and preferences was not measured in this study. It seems likely that more children than adults would learn the 'stop, drop and roll' rule for extinguishing burning clothing from the videotape. This would be especially true if the children have not seen other programs which disseminate this type of information, such as Sesame' Street'. If children's preferences for styles of sleepwear are influenced by exposure to the videotape, children may modify the preferences of their parents, who are the actual purchasers of children's sleepwear. Further, some slight increases in the proportions of consumers who correctly identified the "unsafe designs" of sleepwear as the most flammable were observed after exposure to the video. Since the majority of consumers could already do this before exposure, only a small improvement could be expected. These increases were insignificant and may be attributable to confounding variables such as subject attrition and testing, but may also suggest that the message "looser sleepwear garments are more flammable than snug-fitting

styles" was communicated effectively. The extent to which the videotape increased consumers' awareness of the possible fire hazards associated with children's sleepwear was also not investigated. As illustrated by Lavidge and Steiner's (1961) 'Model for Measurements of Advertising Effectiveness', awareness is the first step in the process of altering purchase behaviour. Wall and Gallagher (1983) discovered that Canadian consumers are not aware of the potential hazard of burn injury that children's sleepwear poses. Perhaps it is necessary to increase consumers' awareness of this hazard first. Once consumers are aware of the hazard, information regarding the flammability of children's sleepwear may be perceived as more relevant and therefore would be more likely to pass through the yielding/acceptance stage of consumer information processing. Only after this message has successfully passed through consumer information processing and is retained in memory, can it be incorporated into the decision process, that is accessed during internal search and drawn upon for alternative evaluation.

Evaluation of the poster presentations' effectiveness in increasing consumers' clothing flammability knowledge and in altering consumers' preferences for children's sleepwear garments was not possible. The data collected, though, provided some useful insights as to consumers' current levels for children's sleepwear styles.

If only design line, and not fibre content, is considered, over three quarters of the sample were able to identify the most flammable styles of children's sleepwear correctly. However, if the significance of fibre content is considered, the proportion of consumers who could correctly identify the most flammable styles of children's sleepwear dropped to less than one third. These findings coincide with those of the videotape experiment and clearly indicate that the consumers' clothing flammability knowledge is inadequate. Further, it seems that there is a strong misconception that polyester is more flammable than cotton. In fact, the consumers' belief that polyester is highly flammable may be responsible for the high proportion of consumers able to identify the "unsafe designs" as the most flammable styles of children's sleepwear. It may have been the polyester fibre content and not the design line of the sleepwear garments at all, which guided their choice of the most flammable styles. If this misconception is not addressed and corrected through education, strong resistance to the new regulations may arise, since, under the new regulations, polyester but not cotton (unless treated with a flame retardant finish) would be allowable in the construction of nightgowns, robes, baby-doll and tailored pyjamas up to size 14X. Since polo pyjamas and sleepers up to size 14X would still be available in cotton, it is more likely that consumers will modify their preferences, either by compromising preferred design for

preferred fibre type or vice versa, and thus passively accept the changes in the mix of alternative children's sleepwear garments resulting from the new legislation.

As was the case with the sample in the videotape experiment, the majority of consumers (83.2%) were found to be familiar with the 'stop, drop and roll' rule for extinguishing burning clothing. It seems evident that existing educational programs have communicated this information effectively.

Almost half the consumers interviewed (49.2%) preferred the polo pyjamas, the least flammable alternative, for their daughters while more than a third (36.89%) preferred the long, cotton flannelette nightgown which is the most flammable alternative. The majority preferred the polo pyjamas for their sons (56.7%) whereas 36.2% preferred the most flammable alternative, the cotton flannelette tailored pyjamas. The high proportion of participants preferring the safest alternative may be the result of demand effects. It may also be because the polo pyjamas are the alternative which most closely resembles sleepers, an alternative not included in the questionnaire. A large proportion of the participants (39.7%) only had children under four years of age and the majority of all the consumers' children (80.9%) were under the age of four. The most popular style of sleepwear for this age group is

sleepers. Thus, the large proportion of consumers preferring the safest style of children's sleepwear may only be indicative of parents of very young children. Parents of older children may not prefer such safe sleepwear styles. Also, since consumers' knowledge of clothing flammability was observed to be inadequate, it is highly unlikely that the participants knowingly preferred the safest alternative.

It is alarming to discover that a good-sized proportion of consumers prefer the most flammable styles of children's sleepwear for both girls and boys. These findings coincide with those of Wall and Gallagher (1983) and strongly indicate the need for educational and/or regulatory programs.

Both poster presentations were found to be dismally ineffective because they both failed to attract adequate consumer attention. If the posters cannot attract and maintain attention, then the information they present cannot and will not be processed nor incorporated into the consumers' purchase decision making process.

The alternative poster presentation was found to be slightly better in attracting consumer attention. Though this difference was not significant, when one considers that the consumers were exposed to the alternative poster

presentation only during the visit in which the interview took place, but may have been exposed to the CCAC/CPS presentation during previous visit(s), the increased attention that the alternative poster received does seem worthy of further attention.

5.3 LIMITATIONS

The present study was subject to several limitations. These will now be outlined and discussed.

Total randomization was not possible for the videotape evaluation. Participants who belonged to the largest organization were randomly assigned to pretested and posttest-only groups. However, assignment to control and experimental groups was determined by their attendance at the meeting during which the videotape was shown. The extent to which assignment by the participants' attendance differed from random assignment is unknown, yet assumed to be minimal. The smaller clubs and groups were arbitrarily assigned to control and experimental posttest-only treatments in order to equalize the distribution of participants among the four treatment groups.

Participants in the evaluation of the poster presentations were not randomly assigned to the experimental treatments either. Their appointment with the

pediatrician during scheduled interview times determined their assignment. The extent to which this method of assignment biased the sample is again, unknown, but assumed to be minimal.

The videotape and poster presentation experiment samples cover a broad range of people with respect to age, number of children and level of education. However, over 75% of the participants had completed high school and/or some post secondary education. According to the Statistics Canada 1988 Census, only 54% of females aged 15 or older, residing in Winnipeg had completed high school and/or some post secondary education. Thus the samples are somewhat skewed towards higher levels of education and are not completely representative of the Canadian population of parents and caregivers. It is especially noteworthy that, even for such a highly attuned sample as this, consumer knowledge of clothing flammability was found to be inadequate.

The sample drawn for the evaluation of the videotape may further have been biased simply because it consisted solely of members of organized groups. The participants' membership in a group may distinguish them from the population at large. As well, the subjects in the videotape sample may have been more knowledgeable about such issues as the flammability of children's sleepwear

because of their contact with other parents or their exposure to guest speakers at group functions. Of interest, however, is the fact that the videotape and poster experiment samples do not differ substantially with respect to the proportion of consumers familiar with the 'stop, drop and roll' rule of extinguishing burning clothing, the consumers' ability to select the most flammable designs of children's sleepwear and their lack of awareness of the flammability of fibres. Since subjects of the poster presentation sample are not necessarily group members, these similarities between the two samples suggest that group membership may not have biased the videotape sample.

The treatment groups in the videotape experiments did not contain thirty or more respondents for every question. Not all the participants provided responses to each question. Some of the questions may not have pertained to certain participants if they had only daughters or only sons and some were simply left blank. The Chi-square test requires a relatively large sample size, N=30 by convention, because, as the Central Limit Theorem illustrates, the sampling distribution of the test statistics approximate the sampling distribution given in the Chi-square table only when N is large (Blalock, 1972, p. 285). Further, several of the frequency distributions contained expected cell frequencies of less than five.

This may have reduced the validity of the Chi-square tests.

It had been hoped to distribute all the posttest questionnaires of the videotape experiment within a time frame of about three weeks. One of the advantages of the Solomon four-group design is that it enables the researcher to control for history or environmental confounding effects such as current events or news coverage. By distributing the posttest questionnaires as closely together as possible, one capitalizes on this advantage. However, because of lower-than-anticipated response rates, extra groups had to be approached in order to increase the sample to an adequate size and even out the distribution among the four treatment groups. Thus the distribution of posttest questionnaires spanned a period of twelve weeks.

The timing of the poster evaluation was not as ideal as it could have been. The interviews were conducted in late June and early July. As school ends at the end of June and many families leave the city for summer vacation, a sharp drop-off in visitation to the pediatricians' offices was noticed during the experimental period. Also, the children's sleepwear garments provided as alternatives on the questionnaire could be viewed as winter garments whereas children would have started to wear lighter styles of sleepwear by this time.

The questionnaire only permitted a choice from among three alternatives of sleepwear styles for girls and three for boys. Thus the measurement of consumer preferences may not be completely representative since participants may have had to settle for the alternative which most closely resembled their actual preferred style. Further, since the sleepwear garments were never actually purchased nor used, the consumers reported preferences may have been subject to demand effects of the questionnaire, even though their preferences were asked for before any mention of flammability.

5.4 IMPLICATIONS AND SUGGESTIONS FOR FUTURE RESEARCH

As has been illustrated by the foregoing discussion, none of the three consumer educational strategies evaluated in this study were effective in improving consumers' clothing flammability knowledge nor in altering consumers' preferences for styles of children's sleepwear. The findings of this study suggest some means of improvement as well as identify several areas in need of further research.

Of particular concern is the consumers' misunderstanding of the flammability properties of fibres. From the results of this study, it is evident that consumers wrongly believe that polyester is more flammable than cotton. Not only is this misconception dangerous, but

it could lead to mistrust of the new federal regulations regarding children's sleepwear and resistance to them. Future educational endeavors should thus emphasize the flammability properties of fibres and stress the appropriateness of the new regulations.

From the results of the two experiments, it is clear that consumers are able to identify accurately "unsafe designs" of children's sleepwear as the most flammable and that, as a result, information regarding the role of a garment's design line on its flammability is redundant. The failure of the videotape and alternative poster presentation to present information on fibre flammability emphasizes the need to determine what consumers know, what they do not know and what they need to know before developing an educational program. Numerous researchers have stressed the importance of this kind of consumer research input in program development (Charters, 1973; Day, 1976; Sell, 1977).

The ineffectiveness of the videotape program may, in part, be attributable to the fact that all of the participants had generally attained higher levels of education, and all were experienced parents. As a result, because of prior exposure to sources of information, the participants may have had higher than average clothing flammability knowledge. By targeting adults with lower

education or adults prior to parenthood (prenatal classes), greater increases in their clothing flammability knowledge may be observed after the educational treatment simply because their baseline knowledge might be lower.

Further research ensuring equivalent exposure to both poster presentations is necessary in order to confirm that the alternative presentation is better at attracting and maintaining consumer attention than the CCAC/CPS presentation. Evaluation permitting a longer time frame may also demonstrate that the alternative poster presentation is an effective strategy in increasing consumers' clothing flammability knowledge and/or in modifying consumer preferences for styles of children's sleepwear. Perhaps more time is necessary for the idea of taking and filling out an activity book at the doctor's office to catch on. If this is found to be so, this format may possibly be an effective means for other educational endeavors.

Since the alternative poster presentation was demonstrated to be slightly more successful in attracting consumer attention, perhaps some of its features should be adapted into the CCAC/CPS poster presentation. The existing CCAC/CPS presentation could easily lend itself to graphic illustrations. Not only would this make the poster more colourful and hence, more physically salient, it may also reduce its formality and enhance its appeal.

The CCAC videotape's impact on consumer awareness of the potential burn injury hazards of children's sleepwear should be investigated. Any further investigation of the videotape's effectiveness in modifying consumer preferences for styles of children's sleepwear or any research examining current consumer sleepwear preferences should be stratified according to the children's age level, to determine if consumer preferences change with the age of their child. More alternatives to choose from should be incorporated in further investigations of consumers' knowledge of children's sleepwear flammability and/or consumer preferences for children's sleepwear styles. Further, some kind of control mechanism needs to be incorporated to ensure that the reported preferences are the same as the actual preferences. A draw like the one Crown and Brown (1983) incorporated in their study, might achieve this.

Further verification of the validity of using children as intermediate transmittors of information to parents is also necessary. Not only would this type of research indicate the suitability of the alternative poster presentation's approach, but also that of the CCAC videotape since the videotape's intended audience also includes children as well as parents. Findings of this type of research may identify a very effective and quite simple means of communicating information to parents in a broad range of consumer topics.

Research evaluating consumer education programs should strive beyond simply determining success or failure. It should concentrate on identifying characteristics of programs which aid in or enhance the program's success as well as those which contribute to its failure. Experiments in which strategy characteristics are manipulatd, such as those conducted by Crown and Brown (1983), Reid and Preusser (1983) and Wright (1979) or reviews comparing various strategies such as those provided by Sell (1979) and Winett and Kagel (1984) will provide insights as to what characteristics in program design and implementation maximize impact. It is necessary to determine how information presented by consumer education programs is most likely to be encountered, that is intentionally or incidentally, and investigate what kinds of approaches are best-suited for those learning conditions. Factors which not only facilitate and encourage association and conceptualization, but also creative or third level learning need to be identified. Findings from this type of research will provide useful and prescriptive guidelines for those responsible for the design and delivery of future consumer educational strategies and thereby improve the efficacy of consumer education. This kind of research may also identify definitive limitations of consumer education and hence lead to the development of criteria for determining when regulatory measures are more appropriate than educational approaches.

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LIST OF APPENDICES

APPENDIX A

CCAC LEAFLET (ENGLISH)

Information

Consommation et Corporations Canada
Consumer and Corporate Affairs Canada

PROTECT YOUR CHILDREN AGAINST CLOTHING FIRES

EVERY YEAR ACROSS CANADA CHILDREN SUFFER SEVERE INJURIES OR DIE AFTER THEIR CLOTHING HAS CAUGHT FIRE. IN MANY CASES, THE VICTIMS WERE WEARING SLEEPWEAR AT THE TIME -- PYJAMAS, NIGHTROBES AND NIGHTGOWNS. TO REDUCE THE RISK OF THIS HAPPENING TO YOUR CHILD:

- SELECT SNUG-FITTING CLOTHES OR SLEEPWEAR AND CHOOSE FABRICS THAT ARE DIFFICULT TO IGNITE AND SLOW TO BURN.
- KEEP MATCHES, LIGHTERS AND OPEN FLAMES OUT OF THE REACH OF CHILDREN.
- DO NOT ALLOW CHILDREN TO PLAY NEAR OR CLIMB ON STOVES, FIREPLACES OR OTHER HEAT SOURCES.
- TEACH YOUR CHILDREN TO STOP, DROP AND ROLL IF THEIR CLOTHING DOES ACCIDENTALLY CATCH FIRE.

FOR MORE INFORMATION, CONTACT YOUR LOCAL CONSUMER AND CORPORATE AFFAIRS CANADA OFFICE LISTED IN THE BLUE PAGES OF THE TELEPHONE BOOK.

- 30 -

JUNE 1986

(VERSION FRANÇAISE DISPONIBLE)

Canada

APPENDIX B

CCAC LEAFLET (FRENCH)

Information

Consommation et Corporations Canada
Consumer and Corporate Affairs Canada

PROTÉGEZ VOS ENFANTS CONTRE LES ACCIDENTS DUS À L'INFLAMMABILITÉ DES VÊTEMENTS

CHAQUE ANNÉE, AU CANADA, DES ENFANTS SUBISSENT DES BLESSURES GRAVES OU MEURENT À LA SUITE DE L'INFLAMMATION DE LEURS VÊTEMENTS. DANS BEAUCOUP DE CAS, LES VICTIMES PORTAIENT DES VÊTEMENTS DE NUIT AU MOMENT DE L'ACCIDENT -- PYJAMA, ROBE DE CHAMBRE OU CHEMISE DE NUIT. VOICI DONC QUELQUES CONSEILS QUI PEUVENT VOUS AIDER À RÉDUIRE LES RISQUES D'ACCIDENTS:

- LORSQUE VOUS ACHETEZ OU CONFECTIONNEZ UN VÊTEMENT DE NUIT OU TOUT AUTRE VÊTEMENT, CHOISISSEZ DES TISSUS RÉSISTANTS À L'INFLAMMATION ET QUI BRÛLENT LENTEMENT.

- GARDEZ LES ALLUMETTES, LES BRIQUETS ET TOUTE FLAMME NUE HORS DE LA PORTÉE DES ENFANTS.

- NE PERMETTEZ PAS AUX ENFANTS DE JOUER PRÈS DES CUISINIÈRES, DES FOYERS OU D'AUTRES SOURCES DE CHALEUR.

- ENSEIGNEZ À VOS ENFANTS À S'ARRÊTER, SE JETER PAR TERRE ET À S'Y ROULER SI JAMAIS LEURS VÊTEMENTS PRENNENT FEU.

POUR DE PLUS AMPLES RENSEIGNEMENTS, CONSULTEZ LE BUREAU DE CONSOMMATION ET CORPORATIONS CANADA LE PLUS PRÈS DE CHEZ-VOUS. VOUS TROUVEREZ L'ADRESSE ET LE NUMÉRO DANS LES PAGES BLEUES DE L'ANNUAIRE.

- 30 -

JUIN 1986

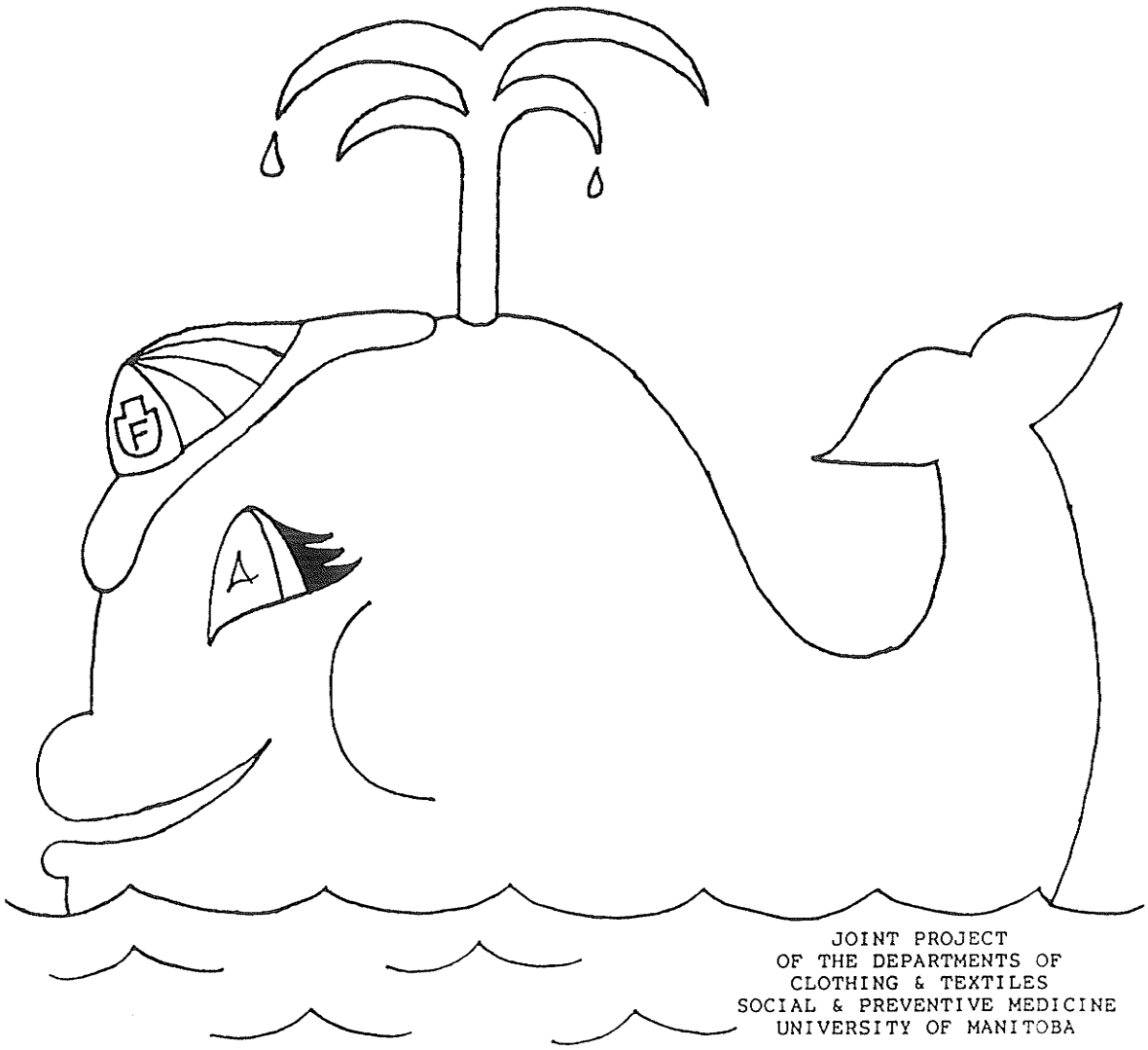
(ENGLISH VERSION AVAILABLE)

Canada

APPENDIX C

ALTERNATIVE POSTER (ENGLISH)

HEY! HELP ME TEACH YOUR CHILDREN ABOUT FIRE SAFETY!

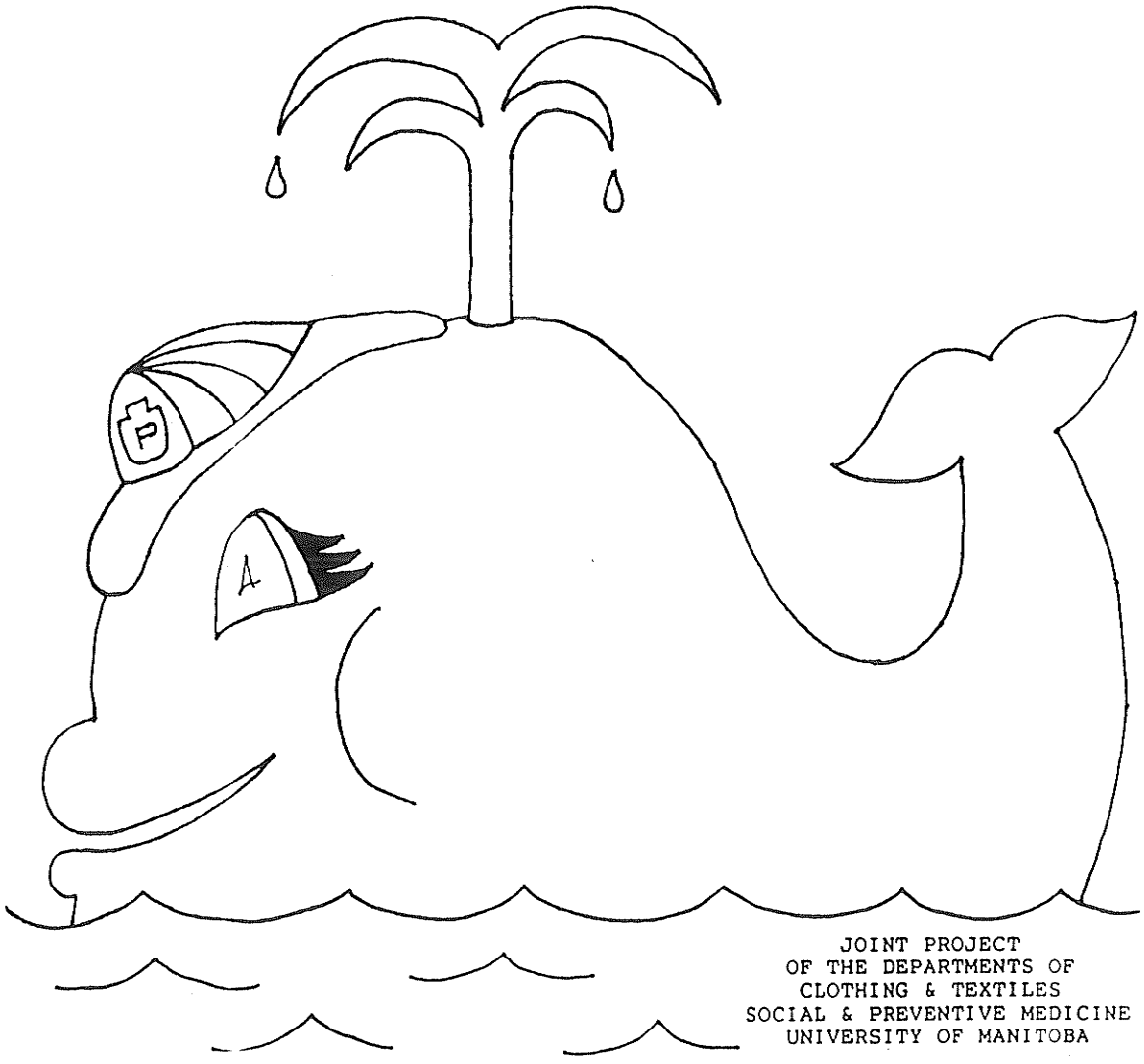


JOINT PROJECT
OF THE DEPARTMENTS OF
CLOTHING & TEXTILES
SOCIAL & PREVENTIVE MEDICINE
UNIVERSITY OF MANITOBA

APPENDIX D

ALTERNATIVE POSTER (FRENCH)

TIENS ! AIDEZ-MOI À APPRENDRE À VOS ENFANTS QUELQUES MESURES DE SÉCURITÉ CONTRE L'INCENDIE



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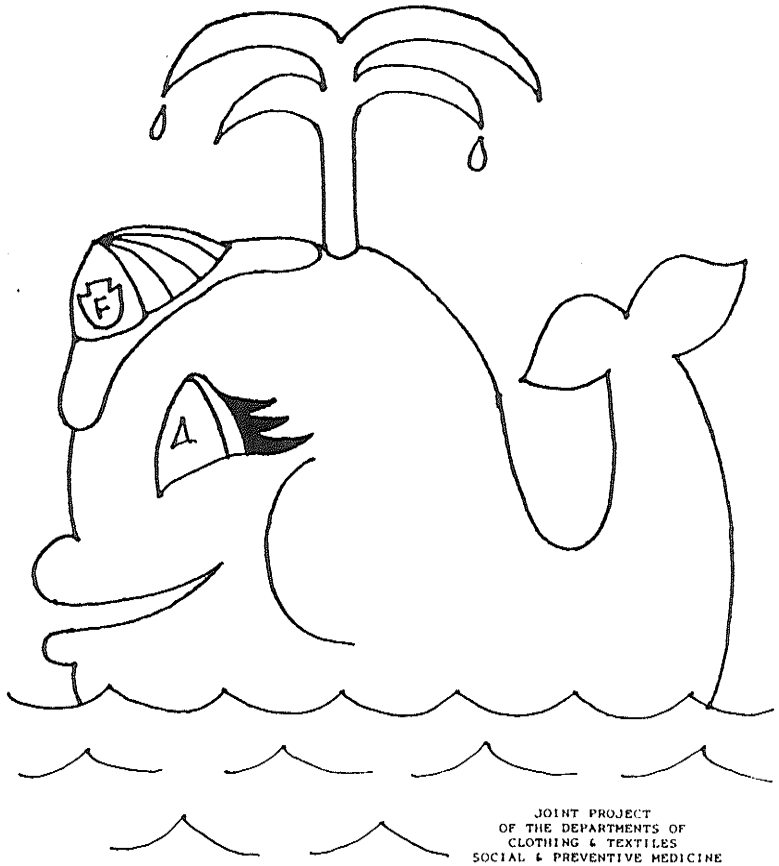
UNIVERSITY OF MANITOBA

APPENDIX E

ALTERNATIVE LEAFLET (ENGLISH)

WALTER WHALE'S FIRE SAFETY ACTIVITY BOOK



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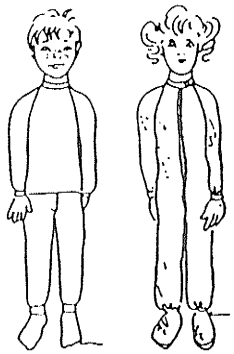
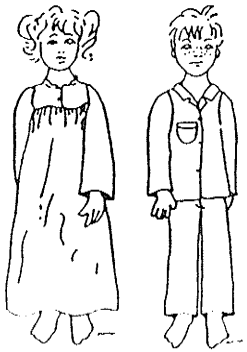
UNIVERSITY OF MANITOBA

Each year many children are hurt very badly because their clothing catches fire. Most often, it is their pyjamas or nightgowns that catch fire. PJ's that are very loose are most dangerous. Loose PJ's can catch on fire much more easily and they burn much faster than snug-fitting PJ's.

These snug-fitting PJ's



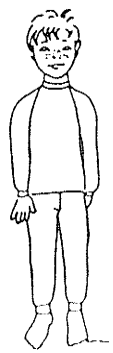
are much safer than



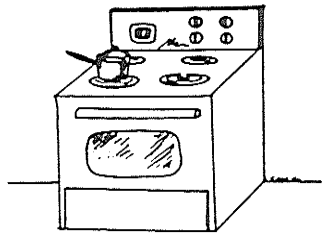
these looser PJ's.

1) Can you tell which of these PJ's are safer? Circle the safest PJ's and put an 'X' through the more dangerous ones.

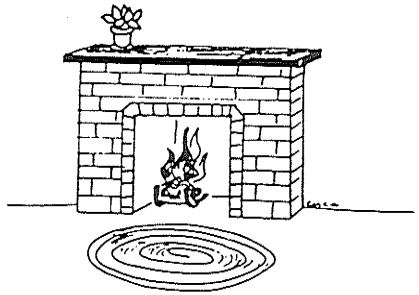
2) Which of these PJ's are safer? Circle the safer PJ's and put an 'X' through the more dangerous ones.



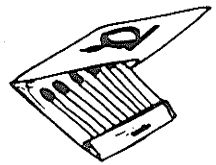
To be fire safe we must learn how to avoid dangerous places. Climbing on cupboards near the stove is DANGEROUS. One of the elements may still be on and be very hot. If we got too close, our PJ's could catch on fire. Draw a Mr. Grumpy Face in the circle beside the stove to show that it is dangerous.



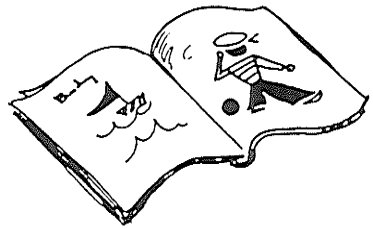
Playing near an open fireplace is DANGEROUS. Always make sure the screen is closed. Draw a Mr. Grumpy Face in the circle beside the fireplace to show that it is dangerous.



Never play with matches! They are very DANGEROUS. Draw a Mr. Grumpy Face beside the matches to show that they are dangerous.



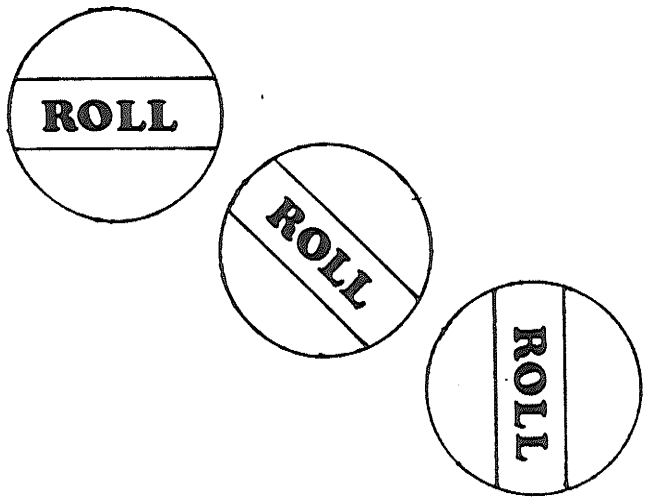
How about reading a book? Reading a book is safe, so draw a Mr. Happy Face in the circle beside the book to show that it is safe.



DO YOU KNOW WHAT TO DO IF YOUR CLOTHES CATCH ON FIRE?

and put your hands over your head.

to the ground, and



SO WHAT DO WE KNOW ABOUT FIRE SAFETY NOW?

- Snug PJ's are safer than looser ones.

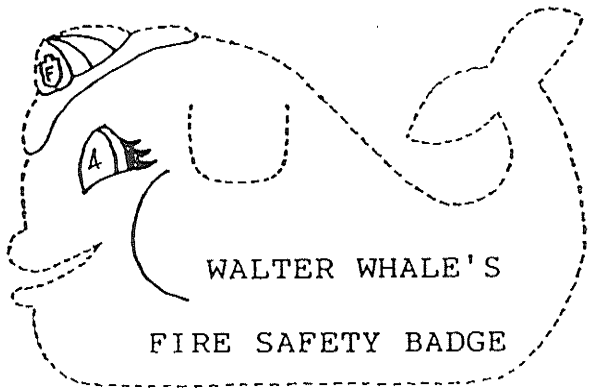
- Climbing cupboards near the stove is dangerous.

- An open fireplace is dangerous. Always make sure the screen is closed.

- Never play with matches.

- If your clothes catch fire, STOP, DROP & ROLL.

Now you know a lot about fire safety and you have earned my fire safety badge. Carefully cut out along the dotted lines and hook the badge around a button on your shirt.



APPENDIX F

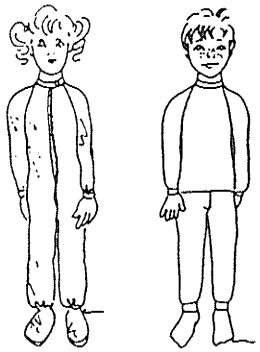
ALTERNATIVE LEAFLET (FRENCH)

LE BOUQUIN ANTI·INCENDIE DE BEAUBEAU LA BALEINE

JOINT PROJECT
OF THE DEPARTMENTS OF
CLOTHING & TEXTILES
SOCIAL & PREVENTIVE MEDICINE
UNIVERSITY OF MANITOBA

Chaque année beaucoup d'enfants sont blessés très gravement parce que leurs vêtements prennent feu. Très souvent ce sont leurs vêtements de nuit qui prennent feu. Les vêtements de nuit très amples sont les plus dangereux. Les pyjamas amples peuvent s'enflammer beaucoup plus facilement et ils brûlent plus rapidement que les pyjamas ajustés.

Ces pyjamas-ci, comme
ils sont bien ajustés,

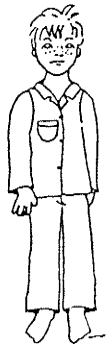


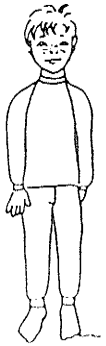
sont beaucoup
plus sécures

que ceux-ci qui
sont plus amples.

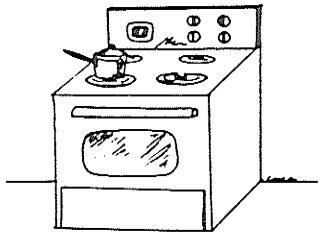
1) Pouvez-vous deviner quel pyjama est le plus sécure? Encerclez celui qui est le plus sécure et marquez un "X" sur le pyjama qui est dangereux.

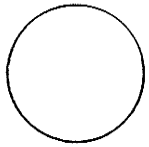
2) Lequel de ces pyjamas est le plus sécure? Encerclez celui qui est le plus sécure et marquez un "X" sur le pyjama qui est dangereux.



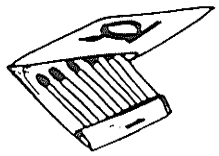


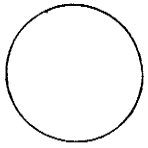
Pour assurer notre sécurite contre l'incendie, il nous faut apprendre à éviter les situations dangereuses. Il est DANGEREUX de jouer près des cuisinières. Un des ronds de cette cuisinière peut être toujours allumé et donc, très chaud. Si on s'y approchait trop, son pyjama pourrait prendre feu. Dessinez le visage de M. Grognon  dans le cercle à côté de la cuisinière pour montrer que c'est un objet dangereux.



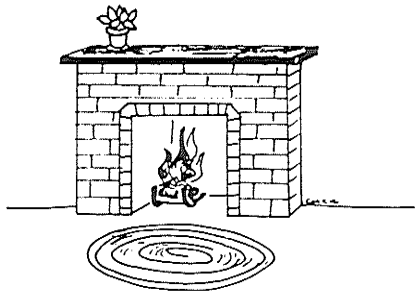


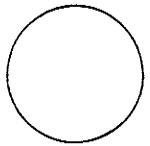
Il ne faut jamais jouer avec des allumettes. Elles sont très DANGEREUSES. Dessinez le visage de M. Grognon dans le cercle à côté des allumettes pour montrer que c'est un objet dangereux. 



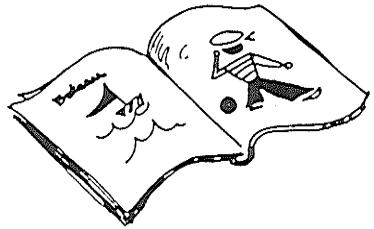


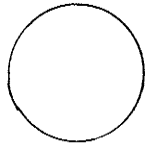
Il est DANGEREUX de jouer près des foyers. Verifiez à ce que l'écran de cheminée est tout le temps fermé. Dessinez le visage de M. Grognon dans le cercle à côté du foyer  pour montrer que c'est un objet dangereux.





Mais est-ce qu'il est dangereux de lire un livre? Non, pas du tout. Alors, dessinez le visage de M. Sourire dans le cercle à côté du livre pour montrer que ce n'est pas un objet dangereux. 

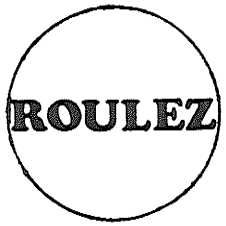


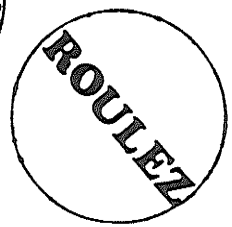


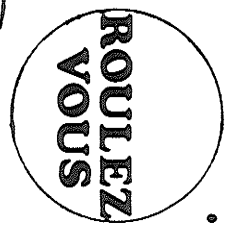
SAVEZ-VOUS QUOI FAIRE SI VOS VÊTEMENTS PRENNENT FEU?

immédiatement.

par terre, les mains sur la tête, et







Eh bien, quelles mesures de sécurité contre l'incendie avons-nous appris?

- Les pyjamas ajustés sont plus sécures que ceux qui sont amples.

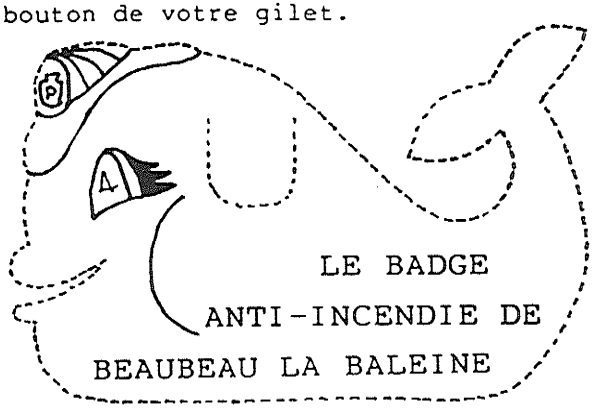
- Il est dangereux de jouer près de la cuisinière.

- Il est dangereux de jouer près des foyers. Verifiez à ce que l'écran de cheminée est tout le temps fermé.

- Ne jouez jamais avec des allumettes.

- Si vos vêtements prennent feu, ARRÊTEZ & ROULEZ-VOUS PAR TERRE.

Maintenant vous connaissez beaucoup de mesures de sécurité contre l'incendie et vous avez merité mon badge anti-incendie. Coupez attentivement sur les pointillés et attacher le badge autour du bouton de votre gilet.



APPENDIX G

QUESTIONNAIRE

University of Manitoba

Children's sleepwear study

1. What age and sex are your children? Please fill in the appropriate information.

   a. How many girls? _____ Ages: _____
   b. How many boys? _____ Ages: _____

   If girls only, go to 2A
   If boys only, go to 2B
   If both, go to 2A and 2B.

2. Please look at the labelled sketches on the next sheet.

   A. Which one of the 3 garments shown would you be <u>most likely</u> to buy for your daughter(s), assuming they are all available in appropriate colors, sizes and a similar price range? Please check (✓) your choice.

      a. _____ Long, cotton flannelette nightgown
      b. _____ Cotton/polyester polo pyjamas (ski pyjamas)
      c. _____ Long, polyester flannelette nightgown.

   B. Which one of the 3 garments shown would you be <u>most likely</u> to buy for your son(s), assuming they are all available in appropriate colors, sizes and a similar price range? Please check (✓) your choice.

      a. _____ Cotton, flannelette tailored pyjamas
      b. _____ Cotton/polyester polo pyjamas (ski pyjamas)
      c. _____ Polyester flannelette tailored pyjamas.

3. Which of the 3 garments shown do you think is most flammable, that is ignites and burns easily? Please circle one of the letters for <u>BOTH</u> girls' and boys' garments.

		Garment		
A.	Girls' garments	a	b	c
B.	Boys' garments	a	b	c

4. What can you teach your children to do if their clothing catches fire?

   _____

   _____

   _____

In order for the results of this questionnaire to be most useful, it is helpful to have a profile of our sample of respondents. Please be assured that all responses are confidential and will not be associated with your name in any way.

1. Highest level of education you have completed (please check one):

Elementary
- Incomplete ..... ____
- Complete ..... ____

Junior High
- Incomplete ..... ____
- Complete ..... ____

High School
- Incomplete ..... ____
- Complete ..... ____

Non-University (Voc/Tech, Nursing Schools)
- Incomplete ..... ____
- Complete ..... ____

University
- Incomplete ..... ____
- Diploma/Certificate (Hygienists) ..... ____
- Bachelor's Degree ..... ____
- Medical Degree (Vets, Drs., Dentists) ..... ____
- Master's Degree ..... ____
- Doctorate ..... ____

2. In total, how many years of schooling do you have? This includes total of grade school, high school, vocational, technical, and university. ____ years

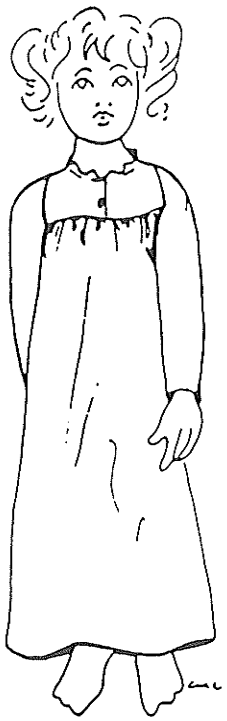
3. Your age (in years). ____ years

4. Are you female ____ or male ____ ?

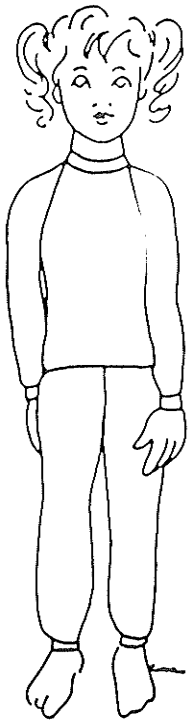
PLEASE RETURN THIS SHEET IN THE ENCLOSED SELF-ADDRESSED POSTAGE-PAID ENVELOPE.

THANK YOU VERY MUCH FOR YOUR COOPERATION.

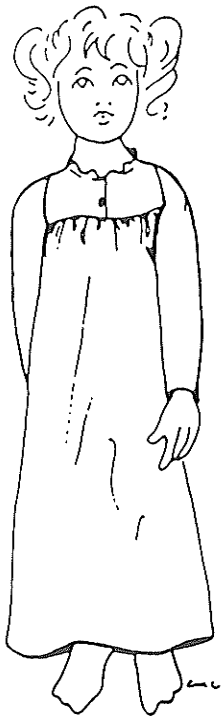
2 A.



a. Cotton flannelette

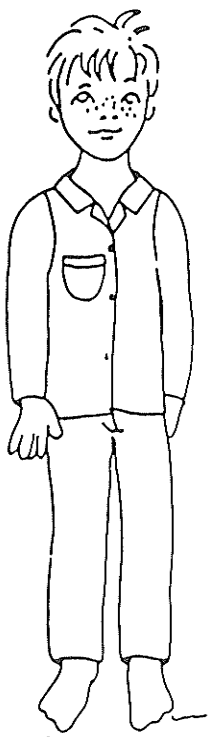


b. Cotton/polyester knit

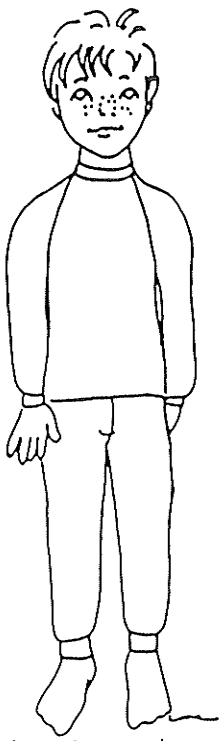


c. Polyester flannelette

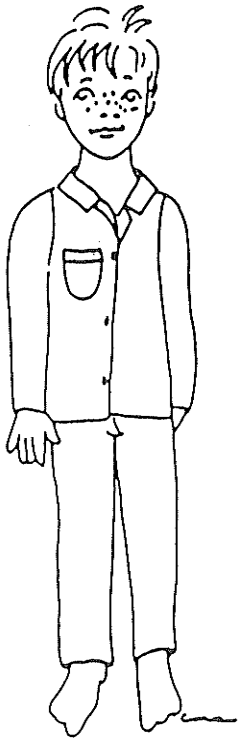
2 B.



a. Cotton flannelette



b. Cotton/polyester knit



c. Polyester flannelette

APPENDIX H

INTERVIEW SCHEDULES

UNIVERSITY OF MANITOBA
CHILDREN'S SLEEPWEAR STUDY
INTERVIEW SCHEDULE [CCA PRESENTATION]

1) Point out poster on wall and ask "Have you noticed this poster?"

____ NO, NOT UNTIL POINTED OUT

____ YES

If YES, when? ____ TODAY

____ PREVIOUS VISIT

2A) Did you read the leaflet in the plastic pouch today?

____ NO

____ YES

2B) Have you read any of the other leaflets that have been put up?

____ NO

____ YES

If YES, what were they about?

_____

_____

_____

3) Have you ever heard or read any other educational information on the flammability of children's sleepwear and/or clothing fire safety?

____ NO

____ YES

If YES, which of the following?

C.C.A. videotape ____

C.C.A. radio announcements ____

Other ____
(Please specify)

_____

_____

_____

UNIVERSITY OF MANITOBA
CHILDREN'S SLEEPWEAR STUDY
INTERVIEW SCHEDULE [ALT. PRESENTATION]

1) Point out poster on wall and ask "Have you noticed this poster?"

____ NO, NOT UNTIL POINTED OUT

____ YES

2) Did you or your child take a copy of "Walter Whale's Fire Safety Activity Book"?

____ NO

____ YES, CHILD

____ YES, PARENT

If YES, did your child read through it?

____ NO ____ YES

Did you read through it yourself?

____ NO ____ YES

3) Have you ever heard or read any other educational information on the flammability of children's sleepwear and/or clothing fire safety?

____ NO

____ YES

If YES, which of the following?

C.C.A. videotape ____

C.C.A. radio announcements ____

Other ____
(Please specify)

_____

_____

_____

APPENDIX I

COVER LETTER TO GROUPS 1 & 2 (PRETEST)

THE UNIVERSITY OF MANITOBA

FACULTY OF HUMAN ECOLOGY

Winnipeg, Manitoba
Canada R3T 2N2

(204) 474-9704

May 12, 1987

Dear Member:

We are researchers at the University of Manitoba who are conducting a study on children's sleepwear. We have arranged with .....(Organization's Name) to make a presentation to your group during the next meeting. Before we begin, we would like to ask you to complete the attached brief questionnaire. It will only take a few minutes. This study has been approved by your group, to whom we will make a donation proportional to the number of participants.

Participation is voluntary and your responses will be treated in confidence. Your name will not be used in conjunction with the data and no record of your name will be kept.

Thank you very much for your cooperation.

Yours sincerely,

Sheila A. Brown, Ph.D.
Faculty of Human Ecology
(474-9704)

and

Richard S. Stanwick, M.D.
Faculty of Medicine
(788-6666)

SAB/ad
d4/87/01/06/1a

APPENDIX J

COVER LETTER TO GROUPS 1 & 2 (POSTTEST)

THE UNIVERSITY OF MANITOBA

FACULTY OF HUMAN ECOLOGY

Winnipeg, Manitoba
Canada R3T 2N2

(204) 474-9704

May 12, 1987

Dear Member:

Thank you for your cooperation to date in our research project on children's sleepwear. As you know the ..... (Organization's Name) has agreed to cooperate with us in the study and we will be making a donation to the group proportional to the number of participants.

Would you please take a few minutes to complete the attached brief questionnaire and return it to us in the enclosed postage paid envelope? While it is similar to the questionnaire you originally completed, we are anxious to have this one filled out as well.

Participation is voluntary and your responses will be treated in confidence. You name will not be used in conjunction with the data and no record of your name will be kept.

Please contact us if you would like additional information. Thank you very much for your cooperation.

Yours sincerely,

Sheila A. Brown, Ph.D.
Faculty of Human Ecology
(474-9704)

and

Richard S. Stanwick, M.D.
Faculty of Medicine
(788-6666)

SAB/ad
d4/87/01/06/1a

APPENDIX K

COVER LETTER TO GROUP 3

THE UNIVERSITY OF MANITOBA

FACULTY OF HUMAN ECOLOGY

Winnipeg, Manitoba
Canada R3T 2N2

(204) 474-9375

May 12, 1987

Dear Member:

Thank you for your cooperation to date in our research project on children's sleepwear. As you know the ..... (Organization's Name) has agreed to cooperate with us in the study and we will be making a donation to the group proportional to the number of participants.

Would you please take a few minutes to complete the attached brief questionnaire and return it to us in the enclosed postage paid envelope?

Participation is voluntary and your responses will be treated in confidence. You name will not be used in conjunction with the data and no record of your name will be kept.

Please contact us if you would like additional information. Thank you very much for your cooperation.

Yours sincerely,

Sheila A. Brown, Ph.D.
Faculty of Human Ecology
(474-9704)

and

Richard S. Stanwick, M.D.
Faculty of Medicine
(788-6666)

SAB/ad
d4/87/01/06/1a

APPENDIX L

COVER LETTER TO GROUP 4

THE UNIVERSITY OF MANITOBA

FACULTY OF HUMAN ECOLOGY

Winnipeg, Manitoba
Canada R3T 2N2
(204) 474-9704

May 12, 1987

Dear Member:

We are researchers at the University of Manitoba who are conducting a study on children's sleepwear. The .....
.....has agreed to cooperate with us in the study and we will make a donation to the organization proportional to the number of participants.

Would you please complete the attached brief questionnaire and return it to us in the enclosed postage-paid envelope? It will only take a few minutes.

Participation is voluntary and your responses will be treated in confidence. Your name will not be used in conjunction with the data and no record of your name will be kept.

Please contact us if you would like additional Information. Thank you very much for your cooperation.

Yours sincerely,

Sheila A. Brown, Ph.D.
Faculty of Human Ecology
(474-9704)

and

Richard S. Stanwick, M.D.
Faculty of Medicine
(788-6666)

SAB/ad
d4/87/01/06/1a

APPENDIX M

COVER LETTER FOR POSTER EXPERIMENT

THE UNIVERSITY OF MANITOBA

FACULTY OF MEDICINE
Department of Social and Preventive Medicine

750 Bannatyne Avenue
Winnipeg, Manitoba
Canada R3E 0W3

June , 1987

Dear Participant:

We are researchers at the University of Manitoba who are conducting a study on children's sleepwear. Your physician has agreed to cooperate with us in this study.

Would you please complete the attached questionnaire and return it to us in the enclosed postage paid envelope?

Participation is voluntary and your responses will be treated in confidence. Your name will not be used in conjunction with the data.

Please contact us if you would like additional information. Thank you very much for your cooperation.

Yours sincerely,

Richard S. Stanwick, M.D.
Faculty of Medicine
(788-6666)

and

Sheila A. Brown, Ph.D.
Faculty of Human Ecology
(474-9704)

RSS/sb

APPENDIX N

FREQUENCY DISTRIBUTIONS: SUBJECT ATTRITION

RESPONSES TO Q2A

+	Unsafe Design	Safe Design	
Initial Group 1	12	20	$X^2 = 0.1785$
Enduring Group 1	12	16	d.f. = 1
			p = 0.7526

RESPONSES TO Q2B

	Unsafe Design	Safe Design	
Initial Group 1	9	22	$X^2 = 0.2096$
Enduring Group 1	9	17	d.f. = 1
			p = 0.7236

RESPONSES TO Q3A

	Unsafe Design	Safe Design	
Initial Group 1	36	4	$X^2 = 0.0507$
Enduring Group 1	30	4	d.f. = 1
			p = 0.8714

RESPONSES TO Q3B

	Unsafe Design	Safe Design	
Initial Group 1	32	6	$X^2 = 0.0004$
Enduring Group 1	27	5	d.f. = 1
			p = 0.9863

Q4: "STOP, DROP & ROLL"

	Did Not Respond	Did Respond	
Initial Group 1	7	35	$X^2 = 0.0037$
Enduring Group 1	6	29	d.f. = 1
			p = 0.9525

Q4: "STOP, DROP & ROLL, COVERING HEAD"

	Did Not Respond	Did Respond	
Initial Group 1	42	0	$X^2 = 0.0000$
Enduring Group 1	35	0	d.f. = 1
			p = 1.0000

+ Initial Group 1 = Group 1 participants who replied to the pretest.
Enduring Group 1 = Group 1 participants who replied to both the pretest and the posttest.

RESPONSES TO Q2A

+	Unsafe Design	Safe Design	
Initial Group 2	15	43	$X^2 = 0.0002$
Enduring Group 2	9	26	d.f. = 1
			p = 0.99

RESPONSES TO Q2B

	Unsafe Design	Safe Design	
Initial Group 2	20	41	$X^2 = 0.2503$
Enduring Group 2	10	26	d.f. = 1
			p = 0.6858

RESPONSES TO Q3A

	Unsafe Design	Safe Design	
Initial Group 2	64	7	$X^2 = 0.2306$
Enduring Group 2	39	3	d.f. = 1
			p = 0.7041

RESPONSES TO Q3B

	Unsafe Design	Safe Design	
Initial Group 2	66	8	$X^2 = 0.4155$
Enduring Group 2	40	3	d.f. = 1
			p = 0.5321

Q4: "STOP, DROP & ROLL"

	Did Not Respond	Did Respond	
Initial Group 2	11	70	$X^2 = 0.0262$
Enduring Group 2	6	42	d.f. = 1
			p = 0.8942

Q4: "STOP, DROP & ROLL, COVERING HEAD"

	Did Not Respond	Did Respond	
Initial Group 2	81	0	$X^2 = 0.0000$
Enduring Group 2	48	0	d.f. = 1
			p = 1.0000

+ Initial Group 2 = Group 2 participants who replied to the pretest.
Enduring Group 2 = Group 2 participants who replied to both the pretest and the posttest.

RESPONSES TO Q2A

	Unsafe Choice	Safe Choice	
Initial Group 1	11	21	$X^2 = 0.1413$
Enduring Group 1	11	17	d.f. = 1
			p = 0.7872

RESPONSES TO Q2B

	Unsafe Choice	Safe Choice	
Initial Group 1	8	23	$X^2 = 0.1716$
Enduring Group 1	8	18	d.f. = 1
			p = 0.7590

RESPONSES TO Q3A

	Unsafe Choice	Safe Choice	
Initial Group 1	5	35	$X^2 = 0.0005$
Enduring Group 1	4	30	d.f. = 1
			p = 0.9469

RESPONSES TO Q3B

	Unsafe Choice	Safe Choice	
Initial Group 1	5	33	$X^2 = 0.0051$
Enduring Group 1	4	28	d.f. = 1
			p = 0.9467

RESPONSES TO Q2A

	Unsafe Choice	Safe Choice	
Initial Group 2	12	46	$X^2 = 0.0679$
Enduring Group 2	8	27	d.f. = 1
			p = 0.8554

RESPONSES TO Q2B

	Unsafe Choice	Safe Choice	
Initial Group 2	15	46	$X^2 = 0.3622$
Enduring Group 2	7	29	d.f. = 1
			p = 0.5817

RESPONSES TO Q3A

	Unsafe Choice	Safe Choice	
Initial Group 2	24	47	$X^2 = 2.4746$
Enduring Group 2	16	16	d.f. = 1
			p = 0.1417

RESPONSES TO Q3B

	Unsafe Choice	Safe Choice	
Initial Group 2	26	48	$X^2 = 0.5076$
Enduring Group 2	18	25	d.f. = 1
			p = 0.4898

APPENDIX O

CODEBOOK - VIDEOTAPE DATA

CODE BOOK - VIDEOTAPE

IDNUM 001 - 400 TEST 1 = PRETEST 2 = POSTTEST

TREATMENT

1 = GROUP 1 2 = GROUP 2 3 = GROUP 3 4 = GROUP 4

AGES

AG/AB1 -> OLDEST DAUGHTER/SON
AG/AB2 -> 2ND OLDEST DAUGHTER/SON
AG/AB3 -> 3RD OLDEST DAUGHTER/SON
AG/AB4 -> 4TH OLDEST DAUGHTER/SON
AG/AB5 -> 5TH OLDEST DAUGHTER/SON

00 -> LESS THAN 1 YR.
01 -> 1 < 2 YRS.
02 -> 2 < 3 YRS.
03 -> 3 < 4 YRS.

88 -> NO DAUGHTER/SON
99 -> NO RESPONSE

TOTAL CHILDREN CHILDREN UNDER 12

99 = NO RESPONSE

QU2A QU2B QU3A QU3B 1 = A 2 = B 3 = C
0 = NO DAUGHTER/SON
9 = NO RESPONSE

Q4A 0 = DID NOT ANSWER 'STOP, DROP, & ROLL'
1 = DID ANSWER 'STOP, DROP, & ROLL'
Q4B 0 = DID NOT ANSWER 'STOP, DROP, & ROLL COVERING HEAD'
1 = DID ANSWER 'STOP, DROP, & ROLL COVERING HEAD'
Q4C 0 = DID NOT ANSWER 'SMOTHER BY WRAPPING SELF IN RUG, ETC'
1 = DID ANSWER 'SMOTHER BY WRAPPING SELF IN RUG, ETC'
Q4D 0 = DID NOT ANSWER 'DON'T RUN'
1 = DID ANSWER 'DON'T RUN'
Q4E 0 = DID NOT ANSWER 'IMMERSE SELF IN WATER'
1 = DID ANSWER 'IMMERSE SELF IN WATER'
Q4F 0 = DID NOT ANSWER 'CALL FOR HELP'
1 = DID ANSWER 'CALL FOR HELP'
Q4G 0 = DID NOT ANSWER 'REMOVE CLOTHING'
1 = DID ANSWER 'REMOVE CLOTHING

EDUCATION

1 = INCOMPLETE ELEMENTARY
2 = COMPLETE ELEMENTARY
3 = INCOMPLETE JR HIGH
4 = COMPLETE JR HIGH
5 = INCOMPLETE HIGH SCHOOL
6 = COMPLETE HIGH SCHOOL
7 = INCOMPLETE NON-UNIVERSITY
8 = COMPLETE NON-UNIVERSITY
9 = INCOMPLETE UNIVERSITY
10 = DIPLOMA/CERTIFICATE
11 = BACHELOR'S DEGREE
12 = MEDICAL DEGREE
13 = MASTER'S DEGREE
14 = DOCTORATE
99 = NO RESPONSE

YEARS OF EDUCATION

99 = NO RESPONSE

AGE

99 = NO RESPONSE

GENDER

1 = MALE
2 = FEMALE
9 = NO RESPONSE

RESIDENCE

1 = URBAN 2 = RURAL
9 = NO RESPONSE

APPENDIX P

CODEBOOK - POSTER DATA

CODE BOOK - POSTER

IDNUM 001 - 400 TEST 1 = PRETEST 2 = POSTTEST

TREATMENT

1 = CCAC/CPS POSTER 2 = ALTERNATIVE POSTER

AGES

AG/AB1 -> OLDEST DAUGHTER/SON
AG/AB2 -> 2ND OLDEST DAUGHTER/SON
AG/AB3 -> 3RD OLDEST DAUGHTER/SON
AG/AB4 -> 4TH OLDEST DAUGHTER/SON
AG/AB5 -> 5TH OLDEST DAUGHTER/SON

00 -> LESS THAN 1 YR.
01 -> 1 < 2 YRS.
02 -> 2 < 3 YRS.
03 -> 3 < 4 YRS.

88 -> NO DAUGHTER/SON
99 -> NO RESPONSE

TOTAL CHILDREN CHILDREN UNDER 12

99 = NO RESPONSE

QU2A QU2B QU3A QU3B 1 = A 2 = B 3 = C
0 = NO DAUGHTER/SON
9 = NO RESPONSE

Q4A 0 = DID NOT ANSWER 'STOP, DROP, & ROLL'
1 = DID ANSWER 'STOP, DROP, & ROLL'
Q4B 0 = DID NOT ANSWER 'STOP, DROP, & ROLL COVERING HEAD'
1 = DID ANSWER 'STOP, DROP, & ROLL COVERING HEAD'
Q4C 0 = DID NOT ANSWER 'SMOTHER BY WRAPPING SELF IN RUG, ETC'
1 = DID ANSWER 'SMOTHER BY WRAPPING SELF IN RUG, ETC'
Q4D 0 = DID NOT ANSWER 'DON'T RUN'
1 = DID ANSWER 'DON'T RUN'
Q4E 0 = DID NOT ANSWER 'IMMERSE SELF IN WATER'
1 = DID ANSWER 'IMMERSE SELF IN WATER'
Q4F 0 = DID NOT ANSWER 'CALL FOR HELP'
1 = DID ANSWER 'CALL FOR HELP'
Q4G 0 = DID NOT ANSWER 'REMOVE CLOTHING'
1 = DID ANSWER 'REMOVE CLOTHING

EDUCATION

1 = INCOMPLETE ELEMENTARY
2 = COMPLETE ELEMENTARY
3 = INCOMPLETE JR HIGH
4 = COMPLETE JR HIGH
5 = INCOMPLETE HIGH SCHOOL
6 = COMPLETE HIGH SCHOOL
7 = INCOMPLETE NON-UNIVERSITY
8 = COMPLETE NON-UNIVERSITY
9 = INCOMPLETE UNIVERSITY
10 = DIPLOMA/CERTIFICATE
11 = BACHELOR'S DEGREE
12 = MEDICAL DEGREE
13 = MASTER'S DEGREE
14 = DOCTORATE
99 = NO RESPONSE

YEARS OF EDUCATION

99 = NO RESPONSE

AGE

99 = NO RESPONSE

GENDER

1 = MALE
2 = FEMALE
9 = NO RESPONSE

RESIDENCE

1 = URBAN 2 = RURAL
9 = NO RESPONSE

NOTICE
---

0 = DID NOT NOTICE POSTER
1 = DID NOTICE POSTER

READ
---

0 = DID NOT READ LEAFLET/PAMPHLET
1 = PARENT READ LEAFLET/PAMPHLET
2 = CHILD READ PAMPHLET

OREAD
---

0 = DID NOT READ ANY OTHER LEAFLETS
1 = DID READ ONE OTHER LEAFLET
2 = READ 2 OTHER LEAFLETS
3 = READ 3 OTHER LEAFLETS
ETC.

INFO
---

0 = DID NOT ENCOUNTER OTHER RELATED INFORMATION
1 = DID ENCOUNTER OTHER RELATED INFORMATION

WHERE
---

0 = CAN'T REMEMBER
1 = NEWSPAPER
2 = MAGAZINES
3 = TELEVISION
4 = RADIO
5 = SPECIAL PUBLICATIONS, LEAFLETS

APPENDIX Q

RAW DATA

OBS	ID	TEST	TREATMNT	AG1	AG2	AG3	AG4	AG5	AB1	AB2	AB3	AB4	AB5	OFFSPRNG	CHILDREN	Q2A	Q2B	Q3A	Q3B	Q4A	Q4B	Q4C	Q4D	Q4E	Q4F	Q4G	EDLEVEL	YRSED	AGE	GENDER	RESIDE	NOTICE	READ	OREAD	INFO	WHERE1	WHERE2
1	2	1	1	5	0	.	.	.	3	0	.	.	.	4	4	2	1	3	3	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	4	1	2	.	.	.	.	.	11	10	8	2	2	5	5	N	2	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	5	1	2	1	1	.	.	.	.	.	.	.	.	2	2	2	N	3	M	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	7	1	2	.	.	.	.	.	2	2	.	.	.	2	2	N	3	M	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	8	1	2	7	1	.	.	.	5	3	1	.	.	5	5	2	3	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	10	1	2	6	3	3	.	.	9	.	.	.	.	4	4	2	2	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	13	1	2	7	1	1	.	.	6	.	.	.	.	4	4	2	2	3	3	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	14	1	2	2	.	.	.	.	4	3	0	0	.	5	5	2	2	3	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	15	1	1	2	2	.	.	.	.	.	.	.	.	2	2	2	N	3	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	16	1	2	.	.	.	.	.	4	4	.	.	.	2	2	N	1	M	3	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	17	1	2	2	2	.	.	.	.	.	.	.	.	2	2	2	N	1	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
12	18	1	2	.	.	.	.	.	11	11	9	.	.	3	3	N	1	3	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	19	1	2	5	.	.	.	.	6	6	.	.	.	3	3	2	2	3	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	20	1	2	1	1	.	.	.	.	.	.	.	.	2	2	2	N	3	3	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	21	1	2	1	.	.	.	.	1	.	.	.	.	2	2	2	2	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	23	1	1	6	6	.	.	.	8	1	.	.	.	4	4	2	2	3	3	1	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
17	26	1	2	.	.	.	.	.	3	0	0	.	.	3	3	N	2	2	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	28	1	2	.	.	.	.	.	1	1	.	.	.	2	2	N	1	2	2	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
19	29	1	2	11	3	1	.	.	9	7	6	1	.	7	7	1	2	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	30	1	1	15	9	.	.	.	17	8	8	.	.	5	3	1	1	3	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	32	1	2	1	.	.	.	.	6	1	.	.	.	3	3	2	1	3	3	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	33	1	1	4	1	.	.	.	5	5	.	.	.	4	4	2	2	3	3	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	34	1	2	0	0	.	.	.	4	.	.	.	.	3	3	1	1	2	2	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
24	35	1	2	.	.	.	.	.	8	2	2	1	.	4	4	N	2	3	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	36	1	2	13	7	3	.	.	10	3	.	.	.	5	4	1	1	3	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	37	1	1	.	.	.	.	.	6	2	2	.	.	3	3	N	2	3	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	38	1	1	1	1	.	.	.	.	.	.	.	.	2	2	2	N	3	M	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	40	1	1	2	.	.	.	.	2	.	.	.	.	2	2	1	1	3	3	1	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0
29	41	1	2	.	.	.	.	.	5	5	2	.	.	3	3	N	3	M	2	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	43	1	1	.	.	.	.	.	9	8	8	.	.	3	3	N	2	3	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	46	1	1	0	0	.	.	.	.	.	.	.	.	2	2	2	N	3	3	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
32	47	1	1	.	.	.	.	.	16	2	2	.	.	3	2	N	2	3	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
33	48	1	2	2	2	.	.	.	.	.	.	.	.	2	2	2	N	3	3	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34	49	1	2	2	2	.	.	.	.	.	.	.	.	2	2	2	N	3	3	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
35	50	1	2	0	.	.	.	.	0	.	.	.	.	2	2	2	2	3	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	51	1	2	5	5	.	.	.	.	.	.	.	.	2	2	1	N	3	3	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
37	54	1	2	.	.	.	.	.	3	3	.	.	.	2	2	N	2	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
38	56	1	2	22	10	.	.	.	19	10	.	.	.	4	2	3	2	1	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
39	57	1	2	.	.	.	.	.	0	0	.	.	.	2	2	N	2	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
40	59	1	2	.	.	.	.	.	9	7	3	3	.	4	4	N	2	M	3	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41	60	1	2	1	1	.	.	.	3	.	.	.	.	3	3	2	2	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
42	62	1	1	4	.	.	.	.	0	0	.	.	.	3	3	2	2	3	3	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
43	63	1	2	1	1	.	.	.	.	.	.	.	.	2	2	2	N	3	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
44	64	1	2	6	4	2	2	.	.	.	.	.	.	4	4	2	N	1	M	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
45	65	1	2	7	2	.	.	.	12	8	2	.	.	5	5	2	2	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
46	68	1	2	4	4	.	.	.	5	.	.	.	.	3	3	2	2	3	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
47	70	1	1	0	0	.	.	.	.	.	.	.	.	2	2	2	N	3	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	71	1	2	4	2	2	.	.	.	.	.	.	.	3	3	2	N	3	3	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

SAS

OBS
ID
TEST
TREATMENT
AGE1
AGE2
AGE3
AGE4
AGE5
ABS1
ABS2
ABS3
ABS4
ABS5
OFFSPRNG
CHILDREN
AGE
GENDER
RSHIDE
NOTICE
READ
DREAD
INFO
WHERE1
WHERE2

OBS	ID	TEST	TREATMNT	AG1	AG2	AG3	AG4	AG5	AB1	AB2	AB3	AB4	AB5	OFFSPRNG	CHILDREN	Q2A	Q2B	Q3A	Q3B	Q4A	Q4B	Q4C	Q4D	Q4E	Q4F	Q4G	EDLEVEL	YRSED	AGE	GENDER	RESIDE	NOTICE	READ	OREAD	INFO	WHERE1	WHERE2
145	116	2	1	9	6	3	3	.	.	.	.	.	.	4	4	2	N	3	3	1	0	0	0	0	0	0	6	12	28	2	1	0	0	0	0	0	0
146	117	2	1	5	.	.	.	.	3	3	.	.	.	3	3	2	2	3	3	0	1	0	0	0	0	0	8	14	31	2	1	0	0	0	0	0	0
147	118	2	1	0	.	.	.	.	4	0	.	.	.	3	3	1	1	3	3	0	1	0	0	0	0	0	8	12	29	2	1	0	0	0	0	0	0
148	121	2	1	9	.	.	.	.	9	.	.	.	.	2	2	2	2	3	3	1	0	1	0	0	0	0	8	12	38	2	1	0	0	0	0	0	0
149	122	2	1	.	.	.	.	.	3	3	.	.	.	2	2	N	2	M	3	1	0	0	0	0	0	0	11	16	34	2	1	0	0	0	0	0	0
150	126	2	1	3	3	.	.	.	.	.	.	.	.	2	2	2	N	3	3	1	0	0	0	0	0	0	6	12	35	2	1	0	0	0	0	0	0
151	128	2	1	10	8	.	.	.	8	.	.	.	.	3	3	1	1	2	2	0	1	0	0	0	0	0	6	13	42	2	2	0	0	0	0	0	0
152	142	2	1	2	2	.	.	.	.	.	.	.	.	2	2	2	N	1	M	1	0	0	0	0	0	0	9	14	30	2	1	0	0	0	0	0	0
153	154	2	1	4	4	.	.	.	17	10	9	5	.	6	5	2	2	3	3	1	0	0	0	0	0	0	8	15	36	2	1	0	0	0	0	0	0
154	160	2	1	2	2	.	.	.	6	.	.	.	.	3	3	2	2	3	3	1	0	0	0	0	0	0	8	12	35	2	1	0	0	0	0	0	0
155	176	2	1	2	2	.	.	.	4	.	.	.	.	3	3	2	2	1	1	1	0	0	0	0	0	0	11	17	39	2	1	0	0	0	0	0	0
156	177	2	1	5	5	.	.	.	8	.	.	.	.	3	3	2	2	1	1	1	0	0	0	0	0	0	9	13	31	2	1	0	0	0	0	0	0
157	180	2	1	3	3	.	.	.	12	7	5	.	.	5	5	2	2	2	2	0	1	0	0	0	0	0	8	12	33	2	2	0	0	0	0	0	0
158	186	2	1	8	.	.	.	.	8	5	.	.	.	3	3	2	2	3	3	1	0	0	0	0	0	0	6	12	32	2	1	0	0	0	0	0	0
159	4	2	2	.	.	.	.	.	11	10	8	2	2	5	5	N	2	1	1	0	0	1	0	0	0	0	5	12	32	2	2	0	0	0	0	0	0
160	5	2	2	1	1	.	.	.	.	.	.	.	.	2	2	2	N	3	M	1	0	0	0	0	0	0	6	12	32	2	2	0	0	0	0	0	0
161	7	2	2	.	.	.	.	.	2	2	1	.	.	3	3	N	2	M	1	1	0	0	0	0	0	0	6	11	25	2	1	0	0	0	0	0	0
162	8	2	2	8	1	.	.	.	5	3	1	.	.	5	5	2	3	1	1	1	0	1	0	0	0	0	5	10	32	2	2	0	0	0	0	0	0
163	10	2	2	6	3	3	.	.	9	.	.	.	.	4	4	2	2	1	1	1	0	0	0	0	0	0	11	15	38	2	2	0	0	0	0	0	0
164	13	2	2	7	1	1	.	.	6	.	.	.	.	4	4	2	2	1	1	1	0	0	1	0	0	0	6	12	28	2	2	0	0	0	0	0	0
165	14	2	2	2	.	.	.	.	4	3	0	0	.	5	5	2	2	3	3	1	0	0	0	0	0	0	9	14	26	2	2	0	0	0	0	0	0
166	17	2	2	2	2	0	.	.	.	.	.	.	.	3	3	2	N	1	1	1	0	0	0	0	0	0	11	16	31	2	1	0	0	0	0	0	0
167	19	2	2	5	.	.	.	.	6	6	.	.	.	3	3	2	2	3	3	1	0	0	0	0	0	0	9	14	26	2	1	0	0	0	0	0	0
168	20	2	2	1	1	.	.	.	.	.	.	.	.	2	2	2	N	3	3	1	0	1	0	0	1	0	11	15	32	2	1	0	0	0	0	0	0
169	28	2	2	.	.	.	.	.	1	1	.	.	.	2	2	N	1	M	2	1	0	1	0	0	0	0	8	14	39	1	2	0	0	0	0	0	0
170	29	2	2	12	4	1	.	.	10	7	6	1	.	7	7	2	2	1	1	1	0	1	0	0	0	0	6	12	36	2	1	0	0	0	0	0	0
171	34	2	2	1	1	.	.	.	4	.	.	.	.	3	3	1	1	1	1	1	0	1	0	0	0	0	3	9	30	2	1	0	0	0	0	0	0
172	36	2	2	13	7	3	.	.	11	3	.	.	.	5	4	1	2	1	1	1	0	1	0	0	0	1	11	18	36	2	1	0	0	0	0	0	0
173	48	2	2	2	2	.	.	.	.	.	.	.	.	2	2	2	N	3	3	1	0	1	0	0	0	0	11	15	30	2	1	0	0	0	0	0	0
174	50	2	2	0	.	.	.	.	0	.	.	.	.	2	2	2	2	3	3	1	0	0	0	0	0	0	9	16	29	2	2	0	0	0	0	0	0
175	51	2	2	5	5	.	.	.	.	.	.	.	.	2	2	1	N	2	2	1	0	1	0	0	0	0	6	12	29	2	1	0	0	0	0	0	0
176	54	2	2	.	.	.	.	.	3	3	.	.	.	2	2	N	2	1	1	1	0	0	0	0	0	0	6	12	26	2	2	0	0	0	0	0	0
177	57	2	2	.	.	.	.	.	0	0	.	.	.	2	2	N	2	3	3	1	0	0	0	0	0	0	9	14	25	2	1	0	0	0	0	0	0
178	59	2	2	.	.	.	.	.	9	7	3	3	.	4	4	N	2	3	3	1	0	1	0	0	0	0	6	12	33	2	2	0	0	0	0	0	0
179	64	2	2	7	4	2	2	.	.	.	.	.	.	4	4	2	N	1	M	1	0	1	0	0	0	0	9	13	34	2	1	0	0	0	0	0	0
180	65	2	2	8	2	.	.	.	13	9	2	.	.	5	4	2	2	1	1	1	0	0	0	0	0	0	6	13	29	2	2	0	0	0	0	0	0
181	71	2	2	5	2	2	.	.	.	.	.	.	.	3	3	1	N	3	3	0	0	1	0	0	0	0	11	17	31	2	1	0	0	0	0	0	0
182	81	2	2	6	.	.	.	.	0	0	.	.	.	3	3	2	2	1	1	0	0	1	0	0	0	0	6	12	31	2	1	0	0	0	0	0	0
183	82	2	2	2	.	.	.	.	6	2	.	.	.	3	3	1	1	3	3	1	0	0	0	0	0	0	6	12	31	2	1	0	0	0	0	0	0
184	87	2	2	.	.	.	.	.	9	7	5	5	2	5	5	N	1	2	2	1	0	0	0	0	0	0	6	12	32	2	2	0	0	0	0	0	0
185	94	2	2	2	.	.	.	.	2	.	.	.	.	2	2	2	2	3	3	1	0	0	0	0	0	0	6	12	23	2	2	0	0	0	0	0	0
186	109	2	2	3	1	1	.	.	.	.	.	.	.	3	3	2	N	1	1	1	0	0	0	0	0	0	5	11	33	2	1	0	0	0	0	0	0
187	111	2	2	.	.	.	.	.	0	0	.	.	.	2	2	N	2	1	1	1	0	1	0	0	0	0	12	18	28	2	2	0	0	0	0	0	0
188	112	2	2	.	.	.	.	.	1	1	.	.	.	2	2	N	2	3	3	1	0	0	0	0	0	0	11	20	32	2	1	0	0	0	0	0	0
189	115	2	2	.	.	.	.	.	8	8	.	.	.	2	2	N	2	M	3	1	0	0	0	0	0	0	6	12	35	2	1	0	0	0	0	0	0
190	130	2	2	2	2	.	.	.	.	.	.	.	.	2	2	2	N	3	2	1	0	0	0	0	0	0	11	16	28	2	1	0	0	0	0	0	0
191	131	2	2	13	11	5	5	.	.	.	.	.	.	4	3	1	N	2	2	1	0	0	0	0	0	0	5	12	33	2	2	0	0	0	0	0	0
192	133	2	2	3	3	.	.	.	6	.	.	.	.	3	3	2	2	3	3	1	0	0	0	0	0	0	13	19	35	2	1	0	0	0	0	0	0

OBS	ID	TEST	TREATMNT	AG1	AG2	AG3	AG4	AG5	AB1	AB2	AB3	AB4	AB5	OFFSPRNG	CHILDREN	Q2A	Q2B	Q3A	Q3B	Q4A	Q4B	Q4C	Q4D	Q4E	Q4F	Q4G	EDUCYRS	YRSED	AGE	GENDER	RESIDE	NOTICE	READ	DREAD	LNED	WHERE1	WHERE2
193	1337	2	2	1	0	0	0	.	10	5	5	.	.	3	3	2	2	3	3	T	0	0	0	0	0	0	10	16	39	2	T	0	0	0	0	0
194	1340	2	2	1	0	0	0	.	13	3	2	.	.	3	3	2	2	3	3	T	0	0	0	0	0	0	11	17	33	2	T	0	0	0	0	0
195	1341	2	2	1	0	0	0	.	12	2	0	.	.	3	3	2	2	3	3	T	0	0	0	0	0	0	11	16	35	2	T	0	0	0	0	0
196	1342	2	2	1	0	0	0	.	10	0	0	.	.	3	3	2	2	3	3	T	0	0	0	0	0	0	11	16	31	2	T	0	0	0	0	0
197	1344	2	2	1	0	0	0	.	14	4	1	.	.	3	3	2	2	3	3	T	0	0	0	0	0	0	11	17	37	2	T	0	0	0	0	0
198	1345	2	2	1	0	0	0	.	11	3	1	.	.	3	3	2	2	3	3	T	0	0	0	0	0	0	11	16	37	2	T	0	0	0	0	0
199	1355	2	2	1	0	0	0	.	10	0	0	.	.	3	3	2	2	3	3	T	0	0	0	0	0	0	11	16	31	2	T	0	0	0	0	0
200	1356	2	2	1	0	0	0	.	10	0	0	.	.	3	3	2	2	3	3	T	0	0	0	0	0	0	11	16	31	2	T	0	0	0	0	0
201	1358	2	2	1	0	0	0	.	10	0	0	.	.	3	3	2	2	3	3	T	0	0	0	0	0	0	11	16	31	2	T	0	0	0	0	0
202	1362	2	2	1	0	0	0	.	10	0	0	.	.	3	3	2	2	3	3	T	0	0	0	0	0	0	11	16	31	2	T	0	0	0	0	0
203	1368	2	2	1	0	0	0	.	10	0	0	.	.	3	3	2	2	3	3	T	0	0	0	0	0	0	11	16	31	2	T	0	0	0	0	0
204	1374	2	2	1	0	0	0	.	10	0	0	.	.	3	3	2	2	3	3	T	0	0	0	0	0	0	11	16	31	2	T	0	0	0	0	0
205	1375	2	2	1	0	0	0	.	10	0	0	.	.	3	3	2	2	3	3	T	0	0	0	0	0	0	11	16	31	2	T	0	0	0	0	0
206	1391	2	2	1	0	0	0	.	10	0	0	.	.	3	3	2	2	3	3	T	0	0	0	0	0	0	11	16	31	2	T	0	0	0	0	0
207	1625	2	2	1	0	0	0	.	10	0	0	.	.	3	3	2	2	3	3	T	0	0	0	0	0	0	11	16	31	2	T	0	0	0	0	0
208	1628	2	2	1	0	0	0	.	10	0	0	.	.	3	3	2	2	3	3	T	0	0	0	0	0	0	11	16	31	2	T	0	0	0	0	0
209	1629	2	2	1	0	0	0	.	10	0	0	.	.	3	3	2	2	3	3	T	0	0	0	0	0	0	11	16	31	2	T	0	0	0	0	0
210	1632	2	2	1	0	0	0	.	10	0	0	.	.	3	3	2	2	3	3	T	0	0	0	0	0	0	11	16	31	2	T	0	0	0	0	0
211	1633	2	2	1	0	0	0	.	10	0	0	.	.	3	3	2	2	3	3	T	0	0	0	0	0	0	11	16	31	2	T	0	0	0	0	0
212	1634	2	2	1	0	0	0	.	10	0	0	.	.	3	3	2	2	3	3	T	0	0	0	0	0	0	11	16	31	2	T	0	0	0	0	0
213	1635	2	2	1	0	0	0	.	10	0	0	.	.	3	3	2	2	3	3	T	0	0	0	0	0	0	11	16	31	2	T	0	0	0	0	0
214	1636	2	2	1	0	0	0	.	10	0	0	.	.	3	3	2	2	3	3	T	0	0	0	0	0	0	11	16	31	2	T	0	0	0	0	0
215	1637	2	2	1	0	0	0	.	10	0	0	.	.	3	3	2	2	3	3	T	0	0	0	0	0	0	11	16	31	2	T	0	0	0	0	0
216	1638	2	2	1	0	0	0	.	10	0	0	.	.	3	3	2	2	3	3	T	0	0	0	0	0	0	11	16	31	2	T	0	0	0	0	0
217	1639	2	2	1	0	0	0	.	10	0	0	.	.	3	3	2	2	3	3	T	0	0	0	0	0	0	11	16	31	2	T	0	0	0	0	0
218	1640	2	2	1	0	0	0	.	10	0	0	.	.	3	3	2	2	3	3	T	0	0	0	0	0	0	11	16	31	2	T	0	0	0	0	0
219	1641	2	2	1	0	0	0	.	10	0	0	.	.	3	3	2	2	3	3	T	0	0	0	0	0	0	11	16	31	2	T	0	0	0	0	0
220	1642	2	2	1	0	0	0	.	10	0	0	.	.	3	3	2	2	3	3	T	0	0	0	0	0	0	11	16	31	2	T	0	0	0	0	0
221	1643	2	2	1	0	0	0	.	10	0	0	.	.	3	3	2	2	3	3	T	0	0	0	0	0	0	11	16	31	2	T	0	0	0	0	0
222	1644	2	2	1	0	0	0	.	10	0	0	.	.	3	3	2	2	3	3	T	0	0	0	0	0	0	11	16	31	2	T	0	0	0	0	0
223	1645	2	2	1	0	0	0	.	10	0	0	.	.	3	3	2	2	3	3	T	0	0	0	0	0	0	11	16	31	2	T	0	0	0	0	0
224	1646	2	2	1	0	0	0	.	10	0	0	.	.	3	3	2	2	3	3	T	0	0	0	0	0	0	11	16	31	2	T	0	0	0	0	0
225	1647	2	2	1	0	0	0	.	10	0	0	.	.	3	3	2	2	3	3	T	0	0	0	0	0	0	11	16	31	2	T	0	0	0	0	0
226	1648	2	2	1	0	0	0	.	10	0	0	.	.	3	3	2	2	3	3	T	0	0	0	0	0	0	11	16	31	2	T	0	0	0	0	0
227	1649	2	2	1	0	0	0	.	10	0	0	.	.	3	3	2	2	3	3	T	0	0	0	0	0	0	11	16	31	2	T	0	0	0	0	0
228	1650	2	2	1	0	0	0	.	10	0	0	.	.	3	3	2	2	3	3	T	0	0	0	0	0	0	11	16	31	2	T	0	0	0	0	0
229	1651	2	2	1	0	0	0	.	10	0	0	.	.	3	3	2	2	3	3	T	0	0	0	0	0	0	11	16	31	2	T	0	0	0	0	0
230	1652	2	2	1	0	0	0	.	10	0	0	.	.	3	3	2	2	3	3	T	0	0	0	0	0	0	11	16	31	2	T	0	0	0	0	0
231	1653	2	2	1	0	0	0	.	10	0	0	.	.	3	3	2	2	3	3	T	0	0	0	0	0	0	11	16	31	2	T	0	0	0	0	0
232	1654	2	2	1	0	0	0	.	10	0	0	.	.	3	3	2	2	3	3	T	0	0	0	0	0	0	11	16	31	2	T	0	0	0	0	0
233	1655	2	2	1	0	0	0	.	10	0	0	.	.	3	3	2	2	3	3	T	0	0	0	0	0	0	11	16	31	2	T	0	0	0	0	0
234	1656	2	2	1	0	0	0	.	10	0	0	.	.	3	3	2	2	3	3	T	0	0	0	0	0	0	11	16	31	2	T	0	0	0	0	0
235	1657	2	2	1	0	0	0	.	10	0	0	.	.	3	3	2	2	3	3	T	0	0	0	0	0	0	11	16	31	2	T	0	0	0	0	0
236	1658	2	2	1	0	0	0	.	10	0	0	.	.	3	3	2	2	3	3	T	0	0	0	0	0	0	11	16	31	2	T	0	0	0	0	0
237	1659	2	2	1	0	0	0	.	10	0	0	.	.	3	3	2	2	3	3	T	0	0	0	0	0	0	11	16	31	2	T	0	0	0	0	0
238	1660	2	2	1	0	0	0	.	10	0	0	.	.	3	3	2	2	3	3	T	0	0	0	0	0	0	11	16	31	2	T	0	0	0	0	0
239	1661	2	2	1	0	0	0	.	10	0	0	.	.	3	3	2	2	3	3	T	0	0	0	0	0	0	11	16	31	2	T	0	0	0	0	0
240	1662	2	2	1	0	0	0	.	10	0	0	.	.	3	3	2	2	3	3	T	0	0	0	0	0	0	11	16	31	2	T	0	0	0	0	0

OBS	ID	TEST	TREATMNT	AG1	AG2	AG3	AG4	AG5	AB1	AB2	AB3	AB4	AB5	OFFSPRNG	CHILDREN	Q2A	Q2B	Q3A	Q3B	Q4A	Q4B	Q4C	Q4D	Q4E	Q4F	Q4G	EDLEVEL	YRSED	AGE	GENDER	RESIDE	NOTICE	READ	OREAD	INFO	WHERE1	WHERE2
241	1	2	4	0	0	.	.	.	4	.	.	.	.	3	3	1	1	3	3	1	0	0	0	0	0	0	10	5	34	2	2	0	0	0	0	0	0
242	9	2	4	.	.	.	.	.	8	6	6	.	.	3	3	N	1	M	3	1	0	0	0	0	0	0	6	12	30	2	1	0	0	0	0	0	0
243	31	2	4	14	4	.	.	.	9	9	.	.	.	4	3	1	1	3	3	1	0	1	0	0	0	0	6	13	37	2	1	0	0	0	0	0	0
244	44	2	4	6	1	.	.	.	1	.	.	.	.	3	3	2	2	M	M	1	0	1	0	0	0	0	6	12	31	2	1	0	0	0	0	0	0
245	53	2	4	7	7	.	.	.	.	.	.	.	.	2	2	2	N	1	1	1	0	1	0	0	0	0	11	17	35	2	1	0	0	0	0	0	0
246	61	2	4	2	2	.	.	.	.	.	.	.	.	2	2	1	N	3	3	1	0	1	0	0	0	0	8	15	40	1	1	0	0	0	0	0	0
247	66	2	4	.	.	.	.	.	13	10	10	.	.	3	2	N	2	M	1	1	0	0	1	0	0	0	6	12	40	2	1	0	0	0	0	0	0
248	67	2	4	.	.	.	.	.	5	1	1	.	.	3	3	N	1	2	2	1	0	0	0	1	0	0	10	16	36	2	2	0	0	0	0	0	0
249	69	2	4	.	.	.	.	.	7	2	2	.	.	3	3	N	2	3	3	1	0	0	0	0	0	0	10	17	43	2	1	0	0	0	0	0	0
250	110	2	4	1	1	1	.	.	.	.	.	.	.	3	3	2	N	3	3	1	0	0	0	0	0	0	9	13	32	2	1	0	0	0	0	0	0
251	114	2	4	3	0	.	.	.	0	.	.	.	.	3	3	2	2	3	3	1	0	0	0	0	1	0	6	13	30	2	1	0	0	0	0	0	0
252	120	2	4	2	2	.	.	.	6	.	.	.	.	3	3	1	1	3	3	1	0	1	0	0	0	0	6	12	33	2	1	0	0	0	0	0	0
253	123	2	4	12	.	.	.	.	8	8	.	.	.	3	3	1	1	2	2	1	0	0	0	0	0	0	6	12	31	2	1	0	0	0	0	0	0
254	138	2	4	2	2	.	.	.	0	.	.	.	.	3	3	2	2	1	1	0	0	1	0	0	0	0	8	12	24	2	1	0	0	0	0	0	0
255	147	2	4	5	2	2	.	.	.	.	.	.	.	3	3	2	N	3	3	1	0	0	0	0	0	0	5	11	30	2	2	0	0	0	0	0	0
256	166	2	4	1	1	.	.	.	.	.	.	.	.	2	2	1	N	1	M	1	0	1	1	0	0	0	11	16	27	2	1	0	0	0	0	0	0
257	171	2	4	1	1	.	.	.	3	.	.	.	.	3	3	2	2	1	1	1	0	0	0	0	0	0	6	12	28	2	2	0	0	0	0	0	0
258	173	2	4	12	11	11	8	.	.	.	.	.	.	4	4	1	N	3	M	1	0	0	0	0	0	0	5	13	36	2	1	0	0	0	0	0	0
259	179	2	4	2	2	.	.	.	.	.	.	.	.	2	2	2	N	3	3	1	0	1	1	0	1	0	9	15	31	2	1	0	0	0	0	0	0
260	184	2	4	0	.	.	.	.	3	0	.	.	.	3	3	2	2	1	1	1	0	0	0	0	0	0	6	12	26	2	2	0	0	0	0	0	0
261	185	2	4	0	.	.	.	.	5	5	.	.	.	3	3	2	2	3	3	1	0	1	0	0	0	0	11	18	34	2	1	0	0	0	0	0	0
262	198	2	4	12	.	.	.	.	7	4	3	2	0	6	6	2	M	3	3	1	0	1	1	1	0	0	8	12	.	2	.	0	0	0	0	0	0
263	230	2	4	6	3	.	.	.	.	.	.	.	.	2	2	1	N	3	3	1	0	0	1	0	0	0	11	16	32	2	1	0	0	0	0	0	0
264	231	2	4	7	.	.	.	.	11	.	.	.	.	2	2	2	2	3	3	1	0	0	1	0	1	0	6	12	31	2	1	0	0	0	0	0	0
265	232	2	4	6	3	0	.	.	.	.	.	.	.	3	3	1	N	3	3	1	0	0	0	0	0	0	11	18	32	2	1	0	0	0	0	0	0
266	233	2	4	6	1	.	.	.	.	.	.	.	.	2	2	2	N	3	M	1	0	1	0	0	0	0	12	18	32	2	1	0	0	0	0	0	0
267	234	2	4	1	.	.	.	.	6	.	.	.	.	2	2	2	2	1	1	0	0	0	0	0	0	1	11	19	36	2	1	0	0	0	0	0	0
268	235	2	4	5	.	.	.	.	7	.	.	.	.	2	2	2	2	3	3	1	0	1	0	0	0	0	5	11	29	2	1	0	0	0	0	0	0
269	236	2	4	.	.	.	.	.	4	2	.	.	.	2	2	N	2	1	1	1	0	1	0	0	0	0	6	13	29	2	1	0	0	0	0	0	0
270	237	2	4	.	.	.	.	.	13	11	8	.	.	3	2	N	2	3	3	1	0	0	0	0	0	0	11	17	41	2	1	0	0	0	0	0	0
271	238	2	4	5	.	.	.	.	2	.	.	.	.	2	2	2	2	1	1	1	0	0	0	0	0	0	5	11	31	2	1	0	0	0	0	0	0
272	300	0	1	4	.	.	.	.	.	.	.	.	.	1	1	2	N	2	M	1	0	0	0	0	0	0	6	12	27	1	.	0	0	0	1	3	0
273	301	0	1	.	.	.	.	.	9	7	.	.	.	2	2	N	1	M	2	0	0	0	0	1	1	0	11	12	36	2	.	0	0	0	0	0	0
274	302	0	1	.	.	.	.	.	4	1	.	.	.	2	2	N	1	1	1	1	0	1	0	0	0	0	9	14	27	1	.	0	0	0	1	.	0
275	303	0	1	.	.	.	.	.	0	.	.	.	.	1	1	N	2	1	2	1	0	0	0	0	0	0	11	16	27	2	.	0	0	0	1	3	0
276	304	0	1	0	.	.	.	.	.	.	.	.	.	1	1	2	N	3	3	1	0	0	0	0	0	0	8	14	29	2	.	0	0	0	0	0	0
277	305	0	1	1	.	.	.	.	9	3	.	.	.	3	3	2	M	3	3	1	0	0	1	0	0	0	6	12	35	2	.	1	0	1	1	3	2
278	306	0	1	.	.	.	.	.	1	.	.	.	.	1	1	N	1	M	2	0	0	0	0	0	0	1	8	12	21	2	.	0	0	0	0	0	0
279	307	0	1	.	.	.	.	.	0	.	.	.	.	1	1	N	3	2	2	1	0	0	0	0	0	0	8	13	24	2	.	0	0	0	0	0	0
280	308	0	1	2	0	.	.	.	4	.	.	.	.	3	3	2	2	3	3	1	0	1	0	0	0	0	8	16	33	2	.	0	0	0	1	2	0
281	309	0	1	5	2	.	.	.	4	0	.	.	.	4	4	2	2	1	1	1	0	0	0	0	0	0	2	10	30	2	.	0	0	0	0	0	0
282	310	0	1	8	.	.	.	.	11	2	.	.	.	3	3	2	2	3	3	1	0	0	0	0	0	0	5	9	38	2	.	0	0	0	0	0	0
283	311	0	1	0	.	.	.	.	.	.	.	.	.	1	1	2	N	2	M	0	0	1	0	0	0	0	11	17	29	2	.	0	0	0	0	0	0
284	312	0	1	3	.	.	.	.	0	.	.	.	.	2	2	2	2	2	2	1	0	0	0	0	1	0	7	13	30	2	.	0	0	0	0	0	0
285	313	0	1	8	7	.	.	.	12	.	.	.	.	3	3	1	2	3	3	1	0	0	0	0	0	0	6	.	27	2	.	1	0	0	0	0	0
286	314	0	1	0	.	.	.	.	.	.	.	.	.	1	1	2	N	3	3	1	0	0	1	0	1	0	9	14	28	2	.	0	0	0	1	3	0
287	315	0	1	12	1	.	.	.	.	.	.	.	.	2	2	2	N	1	1	0	0	1	0	1	0	0	5	11	28	2	.	0	0	0	0	0	0
288	316	0	1	0	.	.	.	.	.	.	.	.	.	1	1	1	N	1	1	1	0	0	0	0	0	0	11	16	26	2	.	1	0	0	0	0	0

OBS
ID
TEST
TREATMENT
AGE1
AGE2
AGE3
AGE4
AGE5
AB1
AB2
AB3
AB4
AB5
OFFSPRNG
CHILDREN
AGE A
AGE B
AGE C
AGE D
AGE E
AGE F
AGE G
EDUCATION
YRSED
AGE
GENDER
RESIDE
NOTHCU
READ
DREAD
INFO
WHERE1
WHERE2

OBS	ID	TEST	TREATMNT	AG1	AG2	AG3	AG4	AG5	AB1	AB2	AB3	AB4	AB5
337	365	0	1	11	6	.	.	.	9	.	.	.	.
338	366	0	1	3	2	.	.	.	6	5	.	.	.
339	367	0	1	10	.	.	.	.	.	.	.	.	.
340	368	0	1	.	.	.	.	.	12	8	5	.	.
341	369	0	1	.	.	.	.	.	6	4	3	.	.
342	370	0	1	6	.	.	.	.	8	2	.	.	.
343	371	0	1	0	.	.	.	.	.	.	.	.	.
344	372	0	1	2	.	.	.	.	0	.	.	.	.
345	373	0	1	1	.	.	.	.	.	.	.	.	.
346	374	0	1	.	.	.	.	.	0	.	.	.	.
347	375	0	1	0	.	.	.	.	.	.	.	.	.
348	376	0	1	5	2	.	.	.	8	2	.	.	.
349	377	0	1	6	.	.	.	.	13	11	3	.	.
350	378	0	1	.	.	.	.	.	0	.	.	.	.
351	379	0	1	.	.	.	.	.	7	0	.	.	.
352	380	0	1	13	.	.	.	.	8	.	.	.	.
353	381	0	1	.	.	.	.	.	3	0	.	.	.
354	382	0	1	.	.	.	.	.	9	.	.	.	.
355	383	0	1	5	.	.	.	.	8	.	.	.	.
356	384	0	1	8	.	.	.	.	9	2	.	.	.
357	385	0	1	2	.	.	.	.	0	.	.	.	.
358	386	0	1	.	.	.	.	.	11	.	.	.	.
359	387	0	1	17	12	.	.	.	.	.	.	.	.
360	388	0	1	.	.	.	.	.	0	.	.	.	.
361	389	0	1	0	.	.	.	.	2	.	.	.	.
362	390	0	1	2	.	.	.	.	6	.	.	.	.
363	391	0	1	8	.	.	.	.	12	.	.	.	.
364	392	0	1	13	.	.	.	.	14	8	.	.	.
365	393	0	1	4	1	.	.	.	.	.	.	.	.
366	394	0	1	6	4	.	.	.	.	.	.	.	.
367	395	0	1	2	.	.	.	.	.	.	.	.	.
368	396	0	1	4	.	.	.	.	12	7	.	.	.
369	400	0	2	5	.	.	.	.	0	.	.	.	.
370	401	0	2	.	.	.	.	.	1	.	.	.	.
371	402	0	2	.	.	.	.	.	0	.	.	.	.
372	403	0	2	1	.	.	.	.	.	.	.	.	.
373	404	0	2	8	7	.	.	.	13	10	.	.	.
374	405	0	2	4	.	.	.	.	1	.	.	.	.
375	406	0	2	9	.	.	.	.	11	7	.	.	.
376	407	0	2	3	.	.	.	.	8	.	.	.	.
377	408	0	2	0	.	.	.	.	5	.	.	.	.
378	409	0	2	8	.	.	.	.	5	.	.	.	.
379	410	0	2	.	.	.	.	.	0	.	.	.	.
380	411	0	2	1	.	.	.	.	.	.	.	.	.
381	412	0	2	0	.	.	.	.	.	.	.	.	.
382	413	0	2	.	.	.	.	.	6	.	.	.	.
383	414	0	2	5	.	.	.	.	3	.	.	.	.
384	415	0	2	0	.	.	.	.	.	.	.	.	.

OBS	OFFSPRNG	CHILDREN	Q2A	Q2B	Q3A	Q3B	Q4A	Q4B	Q4C	Q4D	Q4E	Q4F	Q4G	EDLEVEL	YRSED	AGE	GENDER	RESIDE	NOTICE	READ	OREAD	INFO	WHERE1	WHERE2
337	3	3	1	2	3	3	1	0	0	1	0	0	0	9	14	37	2	.	0	0	0	1	1	0
338	4	4	2	1	3	3	0	0	1	0	0	0	1	6	12	35	1	.	0	0	0	0	0	0
339	1	1	2	N	3	3	1	0	0	0	1	0	0	11	17	30	2	.	0	0	0	1	2	0
340	3	3	N	2	1	1	1	0	0	0	0	0	0	11	18	40	2	.	0	0	0	1	3	0
341	3	3	N	M	M	1	0	0	0	0	0	0	0	.	.	.	.	.	0	0	0	0	0	0
342	3	3	1	2	1	1	1	0	0	1	0	0	0	6	12	35	2	.	0	0	0	0	0	0
343	1	1	2	N	3	M	1	0	0	0	0	0	0	9	14	34	2	.	1	0	0	1	5	0
344	2	2	1	1	3	3	1	0	0	0	0	0	0	6	12	27	2	.	0	0	0	0	0	0
345	1	1	1	N	3	3	1	0	0	0	0	0	0	2	4	22	2	.	0	0	0	0	0	0
346	1	1	N	2	2	2	1	0	0	0	0	0	0	5	10	23	2	.	0	0	0	0	0	0
347	1	1	3	N	1	1	1	0	0	0	0	0	0	5	10	28	2	.	0	0	0	0	0	0
348	4	4	1	1	3	3	1	0	0	0	0	0	0	11	13	32	2	.	0	0	0	1	2	0
349	4	3	3	3	1	1	1	0	0	0	0	0	0	11	15	35	2	.	0	0	0	0	0	0
350	1	1	N	1	M	3	1	0	0	0	0	1	0	8	18	28	2	.	0	0	0	0	0	0
351	2	2	N	1	M	2	1	0	0	0	0	0	0	8	13	24	2	.	0	0	0	1	5	0
352	2	1	M	M	M	M	1	0	0	0	0	0	0	6	12	38	2	.	0	0	0	0	0	0
353	2	2	N	1	M	2	0	0	0	0	1	0	0	8	12	30	1	.	0	0	0	0	0	0
354	1	1	N	2	3	3	1	0	0	0	0	0	0	6	8	41	2	.	0	0	0	0	0	0
355	2	2	2	2	2	2	1	0	0	0	0	0	0	9	13	36	2	.	0	0	0	0	0	0
356	3	3	2	2	1	1	1	0	0	0	0	0	0	6	10	.	2	.	1	0	0	0	0	0
357	2	2	2	2	3	3	0	0	1	0	0	0	0	6	12	23	2	.	0	0	0	0	0	0
358	1	1	N	M	N	1	0	0	1	0	0	0	0	9	14	43	2	.	1	0	0	1	2	0
359	2	1	1	N	3	M	1	0	0	0	0	0	0	6	15	44	2	.	0	0	0	1	1	0
360	1	1	N	2	1	1	0	0	0	0	1	1	1	6	10	35	2	.	0	0	0	0	0	0
361	2	2	2	2	1	1	1	0	0	0	0	0	0	12	22	31	2	.	0	0	0	1	5	0
362	2	2	2	2	3	3	0	0	1	0	0	0	0	6	12	34	2	.	0	0	0	1	3	0
363	2	2	1	1	2	2	0	0	0	0	0	0	1	2	4	33	2	.	0	0	0	0	0	0
364	3	1	M	2	3	3	1	0	1	0	0	0	0	8	14	38	2	.	0	0	0	0	0	0
365	2	2	3	N	1	1	1	0	0	0	0	1	0	7	13	31	2	.	0	0	0	0	0	0
366	2	2	1	N	3	3	1	0	0	0	0	0	0	11	17	31	2	.	0	0	0	1	2	0
367	1	1	3	N	M	M	1	0	0	0	0	0	0	3	9	20	2	.	0	0	0	0	0	0
368	3	3	2	2	3	3	1	0	0	0	0	0	0	6	12	34	2	.	1	1	1	1	.	0
369	2	2	3	1	2	3	1	0	0	1	0	0	0	5	9	24	2	.	0	0	0	1	5	0
370	1	1	N	1	M	1	1	0	0	0	0	0	0	6	12	24	2	.	0	0	0	0	0	0
371	1	1	N	2	3	3	1	0	1	0	0	0	0	6	12	21	2	.	0	0	0	0	0	0
372	1	1	1	N	1	1	1	0	0	0	0	0	0	3	8	19	2	.	0	0	0	0	0	0
373	4	3	M	M	M	M	1	0	1	0	0	0	0	9	15	31	2	.	0	0	0	0	0	0
374	2	2	1	1	3	3	1	0	0	1	0	0	0	7	12	23	2	.	0	0	0	0	0	0
375	3	3	M	M	3	3	1	0	0	0	0	0	0	6	12	36	2	.	0	0	0	1	2	0
376	2	2	1	1	3	3	1	0	0	0	0	0	0	5	11	28	2	.	0	0	0	0	0	0
377	2	2	3	2	3	3	1	0	0	0	0	1	0	11	18	32	2	.	0	0	0	1	.	0
378	2	2	1	1	2	2	1	0	0	0	0	0	0	9	16	40	2	.	0	0	0	0	0	0
379	1	1	N	2	3	3	0	0	0	0	0	0	1	6	12	24	2	.	0	0	0	0	0	0
380	1	1	M	N	M	M	1	0	0	0	0	0	0	6	13	27	1	.	0	0	0	0	0	0
381	1	1	3	N	3	3	1	0	0	0	1	0	0	6	12	27	2	.	1	0	0	0	0	0
382	1	1	N	2	M	3	1	0	0	0	1	0	0	6	14	28	2	.	0	0	0	0	0	0
383	2	2	1	1	1	1	1	0	0	0	0	0	0	9	14	26	2	.	0	0	0	1	5	0
384	1	1	1	N	3	M	1	0	0	0	0	0	0	11	21	27	2	.	0	0	0	1	5	0

OBS
ID
TEST
TREATMENT
AGE1
AGE2
AGE3
AGE4
AGE5
ABS1
ABS2
ABS3
ABS4
ABS5
OFFSPRNG
CHILDREN
Q2A
Q2B
Q3A
Q3B
Q4A
Q4B
Q4C
Q4D
Q4E
Q4F
Q4G
EDUCLEVL
YRSWED
AGE
GENDER
RESHOME
NOTHOME
READ
DREAD
HWREW1
HWREW2

OBS	ID	TEST	TREATMNT	AG1	AG2	AG3	AG4	AG5	AB1	AB2	AB3	AB4	AB5	OFFSPRNG	CHILDREN
433	464	0	2	1	0	.	.	.	.	.	.	.	.	2	2
434	465	0	2	3	.	.	.	.	0	.	.	.	.	2	2
435	466	0	2	5	.	.	.	.	2	.	.	.	.	2	2
436	467	0	2	7	.	.	.	.	16	.	.	.	.	2	1
437	468	0	2	8	2	.	.	.	10	.	.	.	.	3	3
438	469	0	2	1	.	.	.	.	.	.	.	.	.	1	1
439	470	0	2	9	8	.	.	.	6	.	.	.	.	3	3
440	471	0	2	.	.	.	.	.	0	.	.	.	.	1	1
441	472	0	2	18	.	.	.	.	20	7	.	.	.	3	1
442	473	0	2	.	.	.	.	.	0	.	.	.	.	1	1
443	474	0	2	.	.	.	.	.	0	.	.	.	.	1	1
444	475	0	2	.	.	.	.	.	8	4	.	.	.	2	2
445	476	0	2	4	.	.	.	.	.	.	.	.	.	1	1
446	477	0	2	9	.	.	.	.	12	12	.	.	.	3	3
447	478	0	2	1	.	.	.	.	.	.	.	.	.	1	1
448	479	0	2	0	.	.	.	.	.	.	.	.	.	1	1
449	480	0	2	4	.	.	.	.	3	.	.	.	.	2	2
450	481	0	2	.	.	.	.	.	1	.	.	.	.	1	1
451	482	0	2	0	.	.	.	.	4	.	.	.	.	2	2
452	483	0	2	5	.	.	.	.	7	.	.	.	.	2	2
453	484	0	2	4	.	.	.	.	6	.	.	.	.	2	2
454	486	0	2	2	.	.	.	.	0	.	.	.	.	2	2
455	487	0	2	10	6	5	.	.	11	.	.	.	.	4	4
456	488	0	2	0	.	.	.	.	.	.	.	.	.	1	1
457	489	0	2	.	.	.	.	.	0	.	.	.	.	1	1
458	490	0	2	7	.	.	.	.	10	.	.	.	.	2	2
459	491	0	2	0	.	.	.	.	8	5	.	.	.	3	3
460	492	0	2	12	7	.	.	.	14	.	.	.	.	3	2
461	493	0	2	1	.	.	.	.	12	10	.	.	.	3	3
462	494	0	2	6	.	.	.	.	4	.	.	.	.	2	2
463	495	0	2	.	.	.	.	.	20	10	.	.	.	2	1
464	496	0	2	.	.	.	.	.	0	.	.	.	.	1	1
465	497	0	2	0	.	.	.	.	.	.	.	.	.	1	1

OBS	Q2A	Q2B	Q3A	Q3B	Q4A	Q4B	Q4C	Q4D	Q4E	Q4F	Q4G	EDLEVEL	YRSED	AGE	GENDER	RESIDE	NOTICE	READ	OREAD	INFO	WHERE1	WHERE2
433	2	N	1	M	1	0	0	0	0	0	0	6	13	25	2	.	0	0	0	0	0	0
434	2	2	1	1	1	0	0	1	0	0	0	5	9	24	2	.	0	0	0	0	0	0
435	2	1	3	3	0	0	1	1	0	0	0	8	15	36	1	.	0	0	0	1	3	0
436	1	1	3	3	1	0	0	0	0	0	0	8	14	33	2	.	0	0	0	1	3	0
437	1	2	2	2	1	0	1	1	0	0	0	6	12	36	2	.	0	0	0	1	2	0
438	2	N	3	3	1	0	0	0	0	1	0	9	14	28	2	.	0	0	0	1	5	0
439	2	2	3	3	1	0	0	0	0	0	0	3	10	35	2	.	0	0	0	1	3	0
440	N	1	M	3	0	0	0	0	1	0	0	11	18	30	2	.	1	0	0	0	0	0
441	N	2	3	3	1	0	1	0	0	0	0	6	12	45	2	.	0	1	0	1	4	0
442	N	1	M	1	1	0	1	0	0	0	0	6	13	25	2	.	0	0	0	0	0	0
443	N	1	1	1	1	0	0	0	0	0	1	6	12	25	2	.	0	0	0	0	0	0
444	N	2	1	1	1	0	0	0	0	0	0	6	12	31	2	.	0	0	0	1	3	2
445	2	N	3	M	1	0	0	1	0	0	0	10	15	32	2	.	1	0	0	1	2	0
446	1	M	2	2	0	0	1	0	0	0	0	6	13	33	2	.	1	0	0	1	2	0
447	1	1	3	3	1	0	0	0	0	1	0	8	9	28	2	.	0	0	0	0	0	0
448	2	N	1	1	1	0	0	0	0	0	0	5	11	28	2	.	0	0	0	0	0	0
449	2	2	3	3	1	0	0	0	0	0	0	6	13	25	2	.	0	0	0	0	0	0
450	N	2	1	1	1	0	0	0	0	0	0	9	13	21	2	.	0	0	0	0	0	0
451	2	2	3	3	1	0	0	0	0	0	0	6	12	27	2	.	1	0	0	0	0	0
452	3	2	1	1	1	0	1	0	0	0	0	6	12	34	2	.	0	0	0	0	0	0
453	1	2	3	3	1	0	0	0	0	0	0	9	14	31	2	.	0	0	0	1	3	0
454	2	2	3	3	1	0	0	0	0	0	0	5	11	24	2	.	0	0	0	1	3	0
455	1	2	3	3	1	0	0	0	0	0	0	8	15	38	2	.	1	2	0	1	3	0
456	2	N	1	M	1	0	0	0	0	0	0	5	9	16	2	.	0	0	0	0	0	0
457	N	M	1	1	1	0	0	0	0	0	0	9	20	36	2	.	0	0	0	1	3	0
458	1	2	1	2	1	0	0	0	0	0	0	2	9	29	2	.	1	2	0	0	0	0
459	1	2	3	3	1	0	0	0	0	0	0	5	11	28	2	.	0	0	0	1	2	3
460	3	2	3	3	1	0	0	0	0	0	0	8	15	38	2	.	0	0	0	1	1	3
461	2	3	1	2	1	0	0	0	0	0	0	6	10	30	2	.	1	2	0	0	0	0
462	2	2	3	3	1	0	0	0	1	0	0	7	14	35	2	.	0	1	0	0	0	0
463	N	2	3	3	1	0	0	0	0	0	0	9	15	38	2	.	0	0	0	1	1	0
464	N	1	3	3	1	0	1	0	0	0	0	11	16	29	2	.	1	0	0	0	0	0
465	1	N	2	2	1	0	0	0	0	0	0	6	12	22	2	.	0	0	0	0	0	0