

The Low Literate Consumer in the Pharmacy

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(ABSTRACT)

The best public policy arises out of a need to provide protection to those who cannot protect themselves in the marketplace. This paper suggests that consumers with limited literacy skills are routinely overlooked within the healthcare arena and may be in need of consumer protection policies. Low literacy is generally perceived to be a stigma, and consumers may actively work to hide this fact. Moreover, given they lack literacy skills, low literate consumers employ other coping strategies to get their needs met. Based on the analysis of secondary data, in-depth interviews with adults from literacy educational centers, and observations in pharmacies, I explore the viability of the coping strategies that low literate consumers use when buying and consuming prescription and non-prescription drugs. The results suggest that while some of the strategies are successful, other strategies may lead to harmful consequences.

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Chapter 1: Introduction

Low literacy continues to be an urgent problem in the United States. Currently almost 24% of the American adult population, or 44 million people, read below a 4th grade reading level. An additional 25% of our population reads between a 5th and 8th grade reading level. These two groups represent 90 million adults in the United States alone (National Center for Education Statistics 2003; The American Literacy Council 2003).

Past research suggests that a correlation exists between low literacy and poor overall health. First, low literate people often have lower paying jobs due to their inability to read, and have little or no healthcare coverage. Thus, they are unable to get regular preventative medical check-ups. They may also be less informed about their healthcare options. Those low literates who do seek medical help often do so later than people with higher levels of literacy, and are more likely to use expensive forms of healthcare such as the emergency room (Movement for Canadian Literacy 2003).

The results from the 1992 National Adult Literacy Survey (NALS) of 13,600 adults estimate that 75% of Americans who reported having a long-term illness also had limited literacy. This same study also finds that people of lower literacy abilities do indeed know less about their illness and the side effects associated with it. To the extent that low literate consumers do not fully understand the illness and treatment, they may suffer poor health outcomes. Further, healthcare providers assume a higher level of literacy by their patients and often do not recognize low literacy; few patients readily disclose this information (Center for Healthcare Strategies 2003, Weir 2001). If doctors do not know how to identify the low literate consumer, they have no way of offering special assistance. And little research exists on the set of challenges that emerges when the low literate consumer shifts from the personal service encounter with the healthcare provider to the potentially more anonymous interactions within a pharmacy surrounded by hundreds of text-dominant packages.

This raises an important question: How do low literate consumers navigate in text-rich environments, such as a pharmacy, to get their health care needs met? Specifically, this paper seeks to understand how low literates purchase prescription and

non-prescription medicines. I begin by defining healthcare literacy and reviewing the relevant research.

Contributions

It is the goal of this study to add to the sparse literature on low literate consumers. This study takes a very specific look at how this consumer group makes decisions regarding medicine. The results of this will help determine how these consumers can improve their market outcomes.

Public Policy

The implications for low literacy issues in public policy include such issues as labeling, consumer education, and health care provider education. Agencies in the government may look at the results of studies such as this in order to change current laws governing the minimum reading level on healthcare material. If 90 million consumers read below a 10th grade level, perhaps having a 10th grade standard for healthcare directions is unrealistic.

Also, an increasing amount of healthcare information is being made available to the consumer. Many low literate consumers may not be able to fully comprehend this material when presented as text. To the extent that they camouflage their low literacy from their doctors, they may miss important information.

Last, healthcare costs for all consumers are rising. It has been found that low literates are not as proactive in health care as consumers of higher literacy, thus leading to more visits to the emergency room, and less attention to long term illnesses. Low literates need to be informed of the best ways to go about seeking health care in attempts become more proactive with their care. Many of these individuals get their healthcare support from the government and thus their increased visits to the emergency room and their increased chance of long-term illnesses has a direct affect on the entire country.

Managers

How low literates make decisions about brands could have significant implications for marketing managers. If it turns out that changes in packaging or the

addition of pictures can help low literates distinguish between brands, managers could benefit from incorporating such techniques. Moreover, to increase retail loyalty store managers may want to invest more into training store employees on offering better assistance, how to identify low literate consumers, and on other ways of conveying information.

Chapter 2: Review of the Literature

Healthcare Literacy

The problems of low literacy are amplified in the healthcare setting, and are talked about in terms of “health literacy.” Muro (2003) defines health literacy as “the ability to understand, access and use health related tools and services available in a given location.” Health literacy is defined from a task-based approach and includes being able to read healthcare related texts, and to understand and use the information presented for treatment. Generally, this research equates traditional literacy (i.e., the ability to read, write and comprehend printed materials) to health literacy. In other words, low literacy levels are assumed to be an indicator of low health literacy. To date, the main focus of health literacy research is to look at those patients who “do not possess the literacy skills needed to maintain a healthy lifestyle” (US Department of Education 2003). This group of low literate individuals, when in the role of patient, is assumed to have difficulty knowing which medicines to purchase, reading and understanding medical instructions, understanding terms used by medical providers, and understanding consent forms related to their rights when receiving healthcare. As a result, these individuals may be at a disadvantage when it comes to choosing and administering their medication, and meeting their overall healthcare needs.

For example, a study in 1995 found that, of those patients with a 3rd grade reading level, only 45% knew of the basic allergies associated with their diagnosis of asthma as compared to 89% of high school graduates (National Institute for Literacy 2003). Thus, low literates may not fully understand their illnesses or get the correct treatment.

In recognition of the variability among patients’ literacy skills, an assessment instrument was developed to identify problem patients so that healthcare providers can offer individual help. The Test of Functional Health Literacy in Adults, also referred to as the TOFHLA, measures health care literacy. This test is designed to test one’s ability to

comprehend adequately written samples of medicine labels (US Department of Education 2003). Although the use of tests can be useful in singling out individuals who may need more assistance, it does little to help us understand the broader problem of how low literates get their healthcare needs met.

As Farley (1997) discusses, the complexity of information presented in over-the-counter (OTC) drug labels is growing as many prescription drugs are now legally sold as OTC drugs. While the number of OTC drugs with serious side effects is increasing, no corresponding protections have occurred to protect potentially vulnerable customers.

Nevertheless, standards are in place to guide over-the-counter drug labels. As described, a label must be “clear and truthful, it must contain directions, warnings, and information on intended uses and side effects and be presented in such a manner as to render the label likely to be understood by ordinary consumers, including individuals with low comprehension ability” (Morris et. al 1998, p. 86). Despite set standards, it is unclear how well over-the-counter labels truly follow these guidelines or what the definition of those consumers with “low comprehension ability” is. Moreover, little research has examined those consumers “with low comprehension ability.” Given the complexity of drug labeling, it is crucial that one not only is able to read what is presented, but even more importantly they must be able to interpret and fully understand what the information means in their lives (Morris et. al 1998).

Thus, the general consensus in the literature is that low levels of traditional literacy translate into low healthcare literacy; low literate consumers are vulnerable and disadvantaged in healthcare transactions. However, recent research suggests that while many low literates are indeed vulnerable, others manage to get their needs met through their creative employment of a range of coping strategies that leverage other skills (Adkins and Ozanne 2003). In the next section, I discuss stigma theory and the coping strategies that have emerged in other consumption domains.

Stigma Theory and Coping Skills

Low levels of literacy are commonly held to be a stigma (Adkins and Ozanne 1997; Beder 1991). Currently, stigma is defined as a mark that diminishes an individual in some contexts (Crocker, Major, and Steele 1998). Stigmas may range from physical

marks such as facial disfigurement to behavioral marks such as obesity. But individuals who possess a “spoiled identity” can either accept the devaluation and the potential negative social evaluation or they can reject the label. Adkins and Ozanne (2003) found that individuals who accept the stigma of low literacy tend to suffer from poorer self-esteem than those who were able to fight or reject the label. In their study, the marketplace success of low literates was determined by both the way that low literates handled the literacy stigma and the resources that they were able to bring to bear. Thus, the authors conclude that consumer literacy involves traditional literacy skills and the ability to complete literacy tasks, but more importantly, consumer literacy involves the ability to wield individual, situational, and social coping skills. While the findings of this study are provocative, it is not clear that the coping strategies that Adkins and Ozanne (2003) identify would necessarily work in a healthcare context.

For example, the first coping mechanism is using the self as a resource. Basically, consumers leverage a range of personal resources to supplement their modest literacy skills. This set of individual coping skills involves memorization, practice, and preplanning. Consumers in this group often memorize lists, products from TV advertisements, and packages, in an attempt to simplify decision-making. They also practice their self-presentation in order to appear literate and avoid detection. Finally, they may preplan their entire shopping experience before entering the retail store. Adkins and Ozanne (2003) found that in many cases low literate consumers make product choices through a trial and error basis; that is, they recognize a brand based on such limited information as TV advertisements, and then buy based on this recognition to test the effectiveness of the medication. While this coping mechanism may work for purchases like food and clothing, or even headache medicine, a trial and error approach may lead to poor consequences when using products ranging from birth control to multi-symptom cold medicine. Moreover, given the plethora of medicines, methods such as memorizing packages may prove ineffective due to the hundreds of similar packages. Also, in comparison to other products such as grocery items, drug packages have few pictures that would help the consumer identify the correct one and instructions may be complicated. Finally, acting literate is a coping strategy that if successful, might keep low literates from getting valuable information and help from a pharmacist.

The second set of common coping methods is situational coping, which is a way to reduce external demands. Consumers limit their shopping to certain stores with familiar salespeople and simple layouts, and they repeatedly purchase the same products. They always use cash so they can avoid having to write checks or sign their names. All of these strategies are aimed at decreasing the demands of the situation to meet the resources of the low literate consumer. These methods of constraining the purchase context may increase the predictability of shopping excursions and may create a zone of comfort for the low literate, but most of these techniques will be ineffective when the low literate consumer is making a new, infrequent or unfamiliar purchase.

The third category of common coping methods is social coping. Here, low literate consumers obtain information and help from trusted people. They may ask their literate family and friends for help and advice regarding purchases they need to make, or they may ask for help from sales people. For those consumers with poor social skills, seeking help from strangers is particularly stressful because they then run the risk that their low literacy will be discovered and subsequently these low literates may not seek help. However, for those low literates with strong social skills, this method of coping may be effective in making health care purchases if the social others consulted are competent.

Healthcare Literacy and Consumer Decision Making

Given their lower level of reading capability, low literate consumers may run into obstacles at all stages of the medicine purchase process: pre purchase decisions, purchase decisions and post purchase decisions. In some cases, however, it is possible that low literates' coping skills may in fact work in the healthcare setting.

Pre-Purchase: At the pre-purchase level of decision-making, one of the largest problems low literates have is their lack of proper preventative healthcare. They get fewer checkups and preventative healthcare than consumers of higher economic status. Ross and Duff (1982) found that people of lower socioeconomic status education tend to receive less information and advice from their doctors than other patients. They also found that, as a result of this poor service encounter, this group is often less likely to return to the doctor. Lower literate consumers may be less able to research the different

medicines available. The problem may be growing since healthcare information is increasingly available online.

Waitzken (1985) talks about a “competence gap” between physicians and patients whereby doctors do not understand the necessary level of comprehension for healthcare materials. They may also use terminology that their patients do not understand. This miscommunication regularly occurs between patients of normal literacy and their doctor. I conjecture that had Waitzken’s study been conducted using low literates, the competence gap would increase as literacy decreases.

Nevertheless, low literates who rely on family and friends who are healthcare literate may not have these problems. Moreover, this social network may help low literates identify physicians who are more approachable and helpful.

Purchase: The purchase stage may be difficult for those consumers simply due to the abundance of medications in the store. Low literates may even find it difficult to locate product classes (e.g., cold medicines) or specific brands within a product category (e.g., PM vs. Daytime, Liquid vs. Pills). The number of potential alternatives that they can choose from is constrained since they are limited to the brands that they recognize or have used before. I conjecture that most choices made at this stage are made based on prior experiences, from memorizing product packaging on TV or recommendations made by family and friends. New purchases are anticipated to be more difficult here due to their lack of prior experience. In these situations, social coping strategies may be employed.

For many other purchases, low literates use the coping by which they try to pass as literate. Referring back to Waitzkin’s competence gap, this impression management may lead doctors or pharmacists to assume a higher level of literacy and comprehension and thus offer little to no information.

Again, there are ways which some of these obstacles could be reduced. Many low literates often shop at the same store for all of their needs. A trusted pharmacist may offer crucial expert advice. It is also possible that low literates get help from family or friends who are competent. They could also rely on popular medicines for common ailments like buying Tylenol for headaches. For long-term illnesses that they are treating, they might get assistance first from a doctor and afterwards buy from habit.

Post-Purchase: Given that the average over the counter medicine label is written at a 10th grade level, low literates may not accurately interpret the warnings and directions for drugs (Comings, Garner and Smith 2000). Problems during the post-purchase process that these consumers must deal with include failure to understand drug interactions warnings, under dosing and overdosing (e.g., based on weight miscalculations), or ignorance of side effects, to name a few.

Even in the event that these consumers get the correct medicine home, many obstacles still exist. Once at home, they may have difficulty reading the directions, which can affect proper dosing, awareness of warnings, and, most importantly, recognizing important side effects. Without the correct and full information, these patients may not make informed decisions about what medicine to take and how to take it. They probably cannot rely on many of the coping mechanisms mentioned like memorization and failure to take the medication properly has serious implications. The coping strategy of trial and error surely will not work in the healthcare domain as it does in others, because of the potential gravity of consequences of incorrect product usage.

Perhaps these consumers are able to identify key words in the directions, like “take two,” since many would be able to read simple phrases. They may also to rely on pictures on the packages to indicate the recommended dosage or communicate potential side effects. While far from ideal, they may be getting partial information. Finally, they may also rely on significant others for help.

To conclude, it is unclear how low literates purchase medicines to get their healthcare needs met. While it is assumed that they fail on many aspects of their purchase decisions due to their inability to read, given that 24% of Americans read below a fourth grade level, it is plausible that they do engage in coping strategies. Perhaps some of the coping strategies previously identified do work for these consumers, but others may also have dangerous consequences. It seems reasonable to conjecture that on the more complicated aspects of their self-medicating that they are falling short. From a public policy perspective, it is important to identify those areas where the coping skills are not sufficient so that steps can be taken to help develop these areas, such as improved packaging.

Chapter 3: Methodology

Overview

The research goal of this study was to understand how low literate adults purchase medicines. Given that the research goal was to understand this overlooked phenomenon and offer contextualized conceptualizations, in-depth interviews were employed. Specifically, I sought to explore the range of coping strategies that low literate consumers use to buy medicines. Coping strategies identified in previous studies were explored, as well as additional strategies that may be relevant within the context of purchasing medicines.

Three types of data were analyzed. First, I was given access to secondary data from a larger qualitative study on low literacy (Adkins 2001). This data had not been analyzed and it broadly investigated the pharmacy service encounter using an unstructured approach. Second, insights gained in the first stage of analysis were challenged with data from in-depth interviews. Third, observational data was collected on the pharmacist-consumer interaction.

The secondary data involved a judgment sample of twenty-two informants who were broadly interviewed across many purchase contexts. The formal interviews ranged in length from one to two hours. In particular, a modified thematic apperception test (TAT) was used that involved an ambiguous picture of a man behind a counter with an “R_x” sign (used to evoke a pharmacy setting). Informants were then asked to explain what they thought was happening in the picture. This technique was included to provide an unstructured exploration of the feelings and experiences of the informants. The primary data collection, which will be discussed at greater length below, involved interviewing 5 respondents specifically in the healthcare domain and observations in 3 pharmacies.

Observational Data Collection

The observational aspect of this study examined the drug store setting in more detail to identify potential problems for the low literate consumer. The objective was to look at how medicine was displayed in the store, how many pictures are actually used on products and in the store, how different drugs are organized, and, most importantly, to record the pharmacists’ interaction with the consumers. Since many times the pharmacist

does not know about the patients reading ability, it is important that the pharmacists give sufficient attention to every consumer with whom he or she speaks. I wished to identify such things as, did the pharmacist ask if the patient has any questions, walk the patient out to the aisle if the consumer was looking for something, point out necessary precautions, and so forth. While I could not listen to actual conversations between pharmacist and patient, I hoped to have gained a general idea of the extensiveness of interactions that take place.

The importance of this part of the study was to see how user friendly a drug store really is. If many consumers are relying solely on others to gather information, it is important that the pharmacists are taking the time they need to with each patient. Also, I hoped to identify areas within the drugstore that could easily be improved. I visited several different drug stores in both rural and urban areas in order to complete this aspect of the data collection. A total of three drug stores were visited: CVS, Wal-Mart and Kroger. A total of 5 hours were spent observing interactions in this domain. During this time, 80 pharmacist-consumer interactions were observed.

In-Depth Interview Method

This study looked at a select group of low literacy individuals through the popular in-depth interview method. An in-depth interview is a qualitative way of collecting data in which respondents are interviewed about a specific topic. After debating the best method for this study, it was determined that an in-depth interview fit the research goals for several reasons. In-depth interviews allowed the researcher to speak intimately with these low literate consumers, while not putting them in what they may have felt was an uncomfortable group situation. Through the use of one-on-one interviews, I was able to explore fully each individual's ideas, experiences, and stories relating to the medicine process without the fear of interruptions or evaluations by others. In-depth interviews also had the obvious added benefit of not needing respondents to read any information.

Method of Recruiting

Low literate consumers are not easily researched using conventional methods. Often these individuals are extremely good at camouflaging their lack of reading skills.

Literacy centers provide a good place for conducting in-depth interviews because the low literate consumers are easily identifiable. Three affiliates of Literacy Volunteers of America were contacted to identify adult learners. The consumers who are found at these centers have made conscious efforts to seek help for their literacy by enrolling in a literacy program. The individuals at the literacy centers clearly possess lower than average literacy.

There were several reasons why the interviews were held at the literacy centers. First, endorsement by the literacy directors may have increased the trust and rapport between the participants and the researcher. Similarly, the low literate students may have been more comfortable having interviews in a familiar setting with familiar students and staff. Because they are seeking out help, it is possible that many students participated in the hopes of helping someone else in the future. Another important consideration was the convenience of the literacy centers because some people may have had transportation problems.

Key decision makers in each center were contacted prior to the actual data collection to get permission and suggestions on the interview method. These individuals have daily contact with low literate consumers thus they had valuable insight into how they cope in the marketplace. During this phase, the three literacy directors also reviewed the interview protocol and gave any suggestions they had on improvements that should be made prior to holding the actual interviews. For example, the literacy directors made suggestions to improve the wording to be more simple and straightforward.

Prior to data collection, all survey tools and interview methods were reviewed and approved by the IRB (Institutional Review Board) of Virginia Tech. This process was to insure that all participants of the study were protected. Each participant signed a form stating they understood the study before interviews took place (*see appendix B for IRB forms*).

Subject Eligibility

Two participants originally interviewed for this study could not be analyzed because it was found that they were English as a Second Language Learners. Most of these individuals are literate in their native language, just not literate in the English

language. While this group of consumers surely is an interesting and important group to study, they differ from low literate American consumers and I could not compare them in the same study. For instance, there may be no stigma associated with learning English as a second language when one knows how to read in one's own language. For this reason, the data collected from these participants is not included in this study.

Makeup of Group

Across both the secondary and primary interview data, all participants shared the problem of low literacy, as well as their affiliation with a literacy training group. Most of the informants had restricted disposable income and were partially dependent on government assistance programs such as WIC (Women, Infant, and Children), SSI, disability, unemployment, and food stamps. The level of dependence on supplemental assistance programs and the informants' overall economic resources varied. Some informants were entirely dependent upon the social welfare system while other informants had limited dependence. Four of the informants were entirely independent of the welfare system. Previous research supports a strong relationship between low literacy and poverty (Kirsch, Jungeblut, and Campell 1992; Kirsch et al. 1993). These informants lived in communities that face tremendous social and economic challenges, such as high rates of unemployment. Despite the importance of these structural barriers, the focus of this study was on individuals' literacy practices within the marketplace.

Data Analysis

All of the interviews were tape recorded and then transcribed. Each interview was analyzed separately for themes. After each interview was analyzed, a between-subject analysis was done to identify common themes. During this phase, contradictory data played an important role in challenging the emerging interpretation. Throughout the iterative process of analysis and writing of the results, the primary data were used to (a) challenge and refine the evolving framework and (b) ensure the findings were accurate (Huberman and Miles 1998; Schwandt 1997).

In-Depth Interview Questions

Past research has found that low literates use several coping mechanisms in order to facilitate their shopping experience. It is the goal of this research to find if these same coping mechanisms work in the specific domain of healthcare. Additional potential coping strategies that may be unique to the health domain were also explored. The interview questions were divided into 3 main sections. First, in the introduction, a simple, non-threatening question was asked to put everyone at ease and to begin to develop rapport between the participant and the interviewer. Second, the broad domain of making prescription and non-prescriptions purchases was explored with particular emphasis on domains that are relevant to marketing: that is, packaging, advertising, and labeling. Broad general questions were followed by probes to make sure that the issue was fully explored. Finally, the last set of questions focused specifically on potential coping strategies that low literates may use when purchasing medicine. The specific coping strategies came from past research, as well as other strategies that were conjectured (*see appendix A for a list of questions and probes*).

Limitations

Interviews are not without their limitations. Many researchers look at depth interviews as simply an exploratory tool and not as a method that yields reliable results. Clearly there is the concern about the bias of the interviewer, and the effects of this bias on the data that is generated. A number of measures were taken to minimize this potential bias. The interviewer used a semi-structured set of interview questions. The interviewer did not know the participants prior to the data collection in order to keep the interview sessions more professional. While many efforts were made to collect and analyze the data objectively, this method clearly involves a direct relationship between the researcher and the participants.

Perhaps one of the greatest obstacles of using the interviews for low literate consumers may be a practical problem of getting low literate consumers to agree to participate in the study. Before holding the interviews, I met with each director to learn about the participants as well as general concerns they feel need to be addressed in the healthcare domain. In addition, compensation of \$15.00 was paid to each participant as a

way to get him or her to participate. This monetary compensation was encouraged by the directors because they felt that the respondents would then perceive this study as legitimate research.

Chapter 4: Results

The findings from both the primary and the secondary data collection can be best described in the following four themes: Situational Coping, Threats, Individual Coping, and Social Coping. Basically, the low literate consumer is many times able to create a zone of comfort in order to get by in simple situations. This zone of comfort is easily threatened due to the complexity of many purchasing decisions. The low literates are then left to turn to themselves as a way to cope in situations, but because their internal resources are so limited they many times are left only to turn to others for help.

It should be noted here that the primary data collection and the secondary data collection are reported together due to the high similarity in responses. Although the data was collected at two different times, the manner in which it was collected was similar and the overall conclusions that are drawn are the same.

Situational Coping: Creating A Zone of Comfort

Most informants read between a first grade and sixth grade reading level (a couple of informants read at a lower level and a couple read at a higher level). Regardless of the level of reading, the low literate consumers have a clear and basic set of expectations that they bring to bear in any pharmacy encounter. These informants all discussed a simple process that involved dropping off prescriptions, gathering simple instructions, and giving a required signature. Consider these representative quotes:

Oh, it's a pharmacy. The woman is coming up to sign her name for the meds she got, because when you go to the pharmacy you have to go the pharmacist for your prescription, then you have to sign the paper for the prescription so they know you got it (Jeff, 44 year old man).

Okay, and she's got a prescription. She has to put her name there, because they have to keep track of what prescription they get. And he's probably telling her how much it costs (Sarah, 66 year old woman).

All of the informants gave the same basic narrative for pharmacy encounters. From experience, they have learned what to expect. By defining clear expectations, these low literate consumers know what usually occurs in this setting, which greatly reduces their stress. They leverage this pre-existing knowledge of the well-defined role for the consumer and pharmacist and, thus, this encounter was generally perceived as a predictable and non-threatening service encounter.

Oh, boy. This is at the pharmacy. There's a man holding a clip board. She's gonna' sign it to get her medicine filled. And, then she'll get her medicine and pay for it if she has to, and then sign the clip board and then she'll go and see if she needs anything else at the store before she goes home...I pick up my Mom's medicine all the time...They just have me sign the clipboard and go. They know who I am, 'cause I've picked up so many so many times (Chris, 22 year old man).

A situational coping strategy that emerged was that these informants frequented the same pharmacy for years. But within this retail environment, they also sought out friendly, known people, who might be the pharmacist, the manager, or a sales person.

I always deal with one drug store. [Researcher: Why do you deal with that drug store?] Because I like the people (Opal, 47 year old woman).

XXX drugstore over in Star City. My best friend works there a lot...and they know me by name (George, 57 year old man).

Surprisingly, several participants knew their pharmacist socially, or a salesperson was known because their children attended school together. Knowing someone at the pharmacy was important because this familiarity made it easier to ask questions. They did not worry about potential embarrassment that low literates sometimes experience when asking questions.

Because they get familiar with you. And, you know, especially if they know you have a problem or something, they are helpful to you. Like the drug store up here. I'm real familiar with the manager. And, they are real good about helping you if they know you. I think if they know you more, they are willing to help you... I don't really like going in and getting medicine, especially if I don't really know what I'm going after. If I do go to a drug store, I like to have somebody with me so they can help me find it (Rebecca, 54 year old woman).

Lois, for example, relies on her pharmacist to inform her about changes in her medication: “now he’ll let know, like, if there’s something I got new and he think I don’t know better. He’ll let me know about it.” Thus, she not only relies on her pharmacist for general information, but also assumed that this trusted other would keep her informed of medical updates.

While many *literate* consumers frequent the same pharmacy for convenience, the *low literate* seeks out the same store because this service encounter is safe. They value having their expectations fulfilled and avoiding surprises and new, unfamiliar experiences. Low literate consumers choose drug stores that they perceive as safe and familiar, in which they are comfortable asking questions. They are store loyal mainly due to their comfort level with the known process and their close trusting relationship with people who work there.

Threats to the Zone of Comfort

When the service encounter is in a familiar setting, with friendly people, and a simple and expected process, they are able to cope. However, this comfort zone is fairly narrow and even slight deviations can lead to problems.

For example, some of the informants discussed the problem of filling out a form at the pharmacy or venturing out into the drug store to locate an item. Here their tone changes from one of confidence to one of fear. Tina, for example, talks about the fear of filling out forms: “She’s probably panicking because she doesn’t know how to fill out the form.” For many of the informants, simple deviations in the expected process, such as the need to fill out a form, become potentially fearful interactions in which the stigma of low literacy may be revealed.

Lack of visual cues. For those individuals who have trouble reading, pictures on packages aid in the identification of the product and the understanding of how to use it (Adkins and Ozanne 2003). As Lois states, “As long as its got a picture on there I know... if it’s capsules or liquid... or (else) you mix it up.” And Mary (22 year old woman) says she can only buy name brand medicines because generic drugs have no pictures to aid in her decision. Most drug products, especially prescription and generic drugs, lack these simple pictures that are used on other consumer products, which can

make product identification much harder for the low literate. For example, Tammy describes trying to buy a pregnancy test kit when she had no one who could help her.

I didn't know which one to get. So I got one...I got the best one I could. It's got pictures on them (Tammy, 21 year old woman).

Clearly, pictures help low literates with product selection and identification and informants lamented the dearth of visual cues in the pharmacy. A number of informants even suggested that their ideal packaging would have pictures.

Okay. If I go to the pharmacist, and somebody says "go get me this..." or I've been to the doctor and the doctor says, "get this or that," I cannot find it. Pharmacies don't have pictures. And, I look for things that have pictures so I can find it. But a lot of these bottles... and I've talked to people who does know how to read, and they have trouble finding things. But I think they need to put somehow pictures... put pictures on the labels, put pictures like this for colds (Rebecca, 54 year old woman).

If I had problems I would ask somebody, I might not get an answer, but I'd find someone, but if they had a little picture like heartburn, up in one of these corners, I would get that one, I think I would. They do it on TV why can't they do it on the boxes and stuff? (Edgar, 60 year old man)

Use of Complex Words. Another commonly cited problem was the use of complex words or as the informants stated, they had problems in understanding "big words." When looking at a package of Zantac 75, Lois comments:

I don't even know that word there, I just know that number - 75...4 Tablets, now I do read that...I would know how many is in there, yea. But now how would I know how many to take? (Lois, 52 year old woman)

Clearly, Lois is able to pick out some of the information on this package, but not nearly enough to know what the medicine is, or how to correctly take it. Many informants indicated that they were indeed able to recognize simple words and phrases. Lois continues, "I just know it by the 'M,' I guess. By the M. It starts with Motrin." Similarly, Kathy says:

Like me, I don't understand big words. I'm the type of person that you have to explain to me what them words are. Like in Tylenol they have—antiseptic--what is it? (Kathy, 35 year old woman)

Similarly, Mary said she was unable to take Tylenol because it contained amoxicillin, which she was allergic to. The real active ingredient, acetaminophen, is clearly being confused with a wide array of other complicated words which sound similar. As stated,

short, simpler words are easier to identify than long, complex words. However, these low literate consumers are often taking medicine while having incomplete information.

Large letters were also desired because they were easier to read. However, the desire for “bigger letters” might have an alternative explanation. The large lettering on most packaging is not only large, but the largest lettering is also usually the simpler words.

Individual Coping: Inadequate Cues and Few Resources

Simple activities that most literate consumers take for granted, such as locating and identifying a product, were the cause of apprehension for low literate consumers. Generally, in a grocery store domain, these consumers rely on pictures and the recognition of simple words or phrases (Adkins and Ozanne 2003). However, pharmaceuticals both lack pictures and use complex language, practices that short-circuited individual coping strategies of memorization and the use of visual cues.

Some low literates adapt by preplanning. For example, Rebecca does not enter a pharmacy unless she knows exactly what she needs. Other informants create external memory aids to help them cope. Anna is able to find her own medicine within the store by using notes that her literacy tutor helps her make:

She would go with me to buy it to the grocery store and tell me. And she'll tell me about it but she'll also tell me the side effects of it...or she would tell me a name and I would write it down and I'd go to the pharmacist with the paper and match it up (Anna, 32 years old woman).

Lois uses a similar technique of short notes in order to remember the correct dosages for her regular medicines:

I write it down. My last dose I write it down...that way I can keep up with it...Like if I had to get new medicine for Kelly or something and Lori will tell me you have to give her this so many hours, like 6 hours, ok she take it and then I wrote that down and then I know when her next dose is. I look at the clock and I count how many hours (Lois, 52 years old woman).

One potential problem with this method is that these notes are likely to be simple and truncated. While they may be getting the correct dose, it is unclear if they have adequate knowledge.

Within the pharmacy, if the purchase process deviates from a very narrow zone of comfort, then low literates have problems. Given that finding products in the drug store can be challenging, the coping strategy that emerges is to seek out help from trusted others.

Social Coping: The Dominant Response

As anticipated, the interviews suggest that the dominant coping strategy employed is seeking help from a spouse, an adult child, a relative, or a trusted person, such as a minister or literacy teacher.

I would send my wife back out to get it (medicine). My wife takes them. We take pretty much the same stuff. She's been doing it all her life—she's diabetic. She buys most of it (the medicine). She's got a good education (Edgar, 60 year old man).

Well, my daughter read on mine (medicine) and said it was good for arthritis...Well, she gets my stuff, my medicine and stuff...I don't like to ask for help but sometimes you have to... I'm just glad for help. I hope my daughter don't quit helping me...if I don't have no body to call that you know to find out about it, I would be hurting (Lois, 52 year old female)

Thus, many of the informants rely on significant social others for help. While informant Lois explicitly acknowledges her dependency on her daughter, she is the exception. Most of the informants accept this reliance and do not explicitly cite any concern over dependency. While those family and friends who are sought may indeed have objectively superior literacy skills, we also know that low literacy is an intergenerational phenomenon. For example, Kathy, who reads at a fifth grade level, provides social support in getting medicines for her family members who are illiterate. One might question the quality of help that Kathy is able to give. Bonnie explicitly acknowledges the fact that her husband provides help that is superior to the help that she can get in the store:

Now, if I was to ask them they would help me, yeah. They would explain it to me just like it is on the bottle but they wouldn't sit down with me like he (her husband) does and explain it to me real carefully word by word (Bonnie, 25 year old female.)

In fact, a number of problems arose in the data that suggest that there are times when reliance on asking family and friends does not necessarily keep the consumers safe when they purchase and use medication.

Because I am not going to say all pharmacy, but some pharmacy they be too dang busy to help you. And by you seeing 65 customers. And you just want to know about that one little thing and the pharmacy is busy. How they gonna be able to help you? And you sick, you don't feel good. You really want to stay home. And the pharmacy is busy (Ann, 32 year old woman).

Ann continues to discuss other problems that arise when you ask for help:

I'd ask somebody for help. Did I feel embarrassed? Yes I did...I usually ask like my kids or someone in my family...that I can trust. If I can't trust you, I don't want to talk to you (Ann, 32 year old woman).

Many of the informants spoke of the difficulty of asking someone for help. Even though they would still ask, it was not an easy task.

Evidently, low literates rely heavily on other people when making decisions. I am unable to assess that quality of the help received, but one can conjecture that the quality varies. Moreover, at times it is difficult to ask for help. When Edgar and Lois were asked how would they cope without help from their family they responded, "it would have been pretty rough" and "I don't know what I'd do! I don't know." Thus, for some of the informants, the social net that supports them is thin.

Dangers: Inadequate Information and Muddling Through

Several potential dangerous practices emerged in the data. First, the informants may not have full information. The confidence with which low literate consumers engage the pharmacist may ironically contribute to them not getting enough information. One example involved a participant discussing how low literates could sign the prescription forms without really knowing what they mean simply because they know that signing on the line is a part of the process:

Okay. This lady goes to the drug store to get her prescription filled. Looks like she has to pick it up and sign for it, because she has to sign. And, some people sign and they don't really know what they're signing. Some people you will see just signing and don't know what they're signing (Michelle, 33 year old female).

Similarly, one informant explicitly said that when she is given the informational slip by the pharmacist, “I usually look at it and throw it in the trash (chuckling).” Thus, the tendency by low literates to try and appear normal may lead them to getting less information or even misinformation and result in *uninformed* consent. In this instance, learning what one is supposed to do may help them succeed in obtaining their medicine and hiding the fact that they are low literate, but it can come with the high cost of not knowing important information regarding the medicine in question.

And, he gives the... you know you have a prescription and you hand it back to him and he make out on the medicine that tell you how to take your medicine. But if you don't know how to read, we can go home and take too many pills. I have done that....Let's say you get 4 different kinds of medication, let's say it's for migraine, back pain, blood pressure, and heart medicine. If you couldn't read the medicine bottle, what happened if you took them all at once? (William, 57 year old man)

Even if this consumer gets past the initial search and purchase, a serious problem with dosing still remains when they get the medicine home and are unsure how to medicate themselves. Another informant said that even after she is given the directions for medications, she still could not always remember the correct dosage:

But there still is sometimes when you have, like I've got a prescription now that's like take two tablets every, twice a day for four days. If there is a long thing on it that keeps repeating itself [um-uh] or you have to take three or four one day and two the next day or something like that, he (husband) still has to help me with that (Bonnie, 25 year old female)

Mary, while pregnant, would not take any medication for any common colds because she was uncertain as to how over the counter medications would affect her fetus. While Mary was correct in obtaining information that certain medications can affect unborn babies, she had no further way of finding out exactly which medications were unsafe and which were not.

The second problem is that there is some evidence that consumers muddle through the process when they do not have help. Kathy suggests that she does without medicine if she cannot get help:

I usually suffer with it so long and then I get so aggravated that I'll go ask, 'Well, can you tell me which medicine would be best for this banging headache that I got?' And they'll help me (Kathy, 35 years old).

In fact, at the end of the interview, Kathy pulled out a prescription bottle that she did not understand and therefore was not taking.

(She pulls the medicine out of her purse.) See how my doctor have my medicine? It's a new medicine and I probably got about 40 pills. But I'm scared to take it. I won't take it...and I've had this since last month...He (the doctor) said its gonna cause drowsiness. But my thing is, if it cause drowsiness to me, how am I going to be able to take care of them (i.e., her kids)? What's going to be the side effects when I go to get them up for school? Am I going to be still tired or if I'm gonna be what? (Kathy, 35 years old)

Despite the fact that Kathy was able to get the medicine she needed, her lack of knowledge about it inhibited her from taking the prescription.

Similarly, when Edgar was asked how long he would take a medicine with unknown side effects; he said for three or four days. Occasionally it seemed like there was a trial-and-error approach. As Edgar chuckles, "If it works, I'll take it. Sometimes if it don't, I'll take it!" Edgar then comments on a time when this approach did not work as planned:

[Researcher: have you ever guessed at medicine?] Yes I have. It made me sick to the stomach...I think that was the only time I got sick of taking a drug.

While trail and error may be an approach that some low literates use, it is obviously an approach that can have serious consequences, especially when dosing a small child or elderly person.

Moreover, informants often spoke about the medicine in ways that suggested a fairly superficial understanding of the medicine they were taking. For example, many informants referred to their medicine in terms of its color—"the blue pill" or "the white pill."

One time they give me a prescription and it wasn't the same color I had before. And they told me it was like a generic and it was okay. It wouldn't hurt me. I called about it one time (Sarah, 66 year old woman).

A number of the informants were unaware or confused over side effects or warnings. For example, Mary stated that she was allergic to amoxicillian so she could not take Tylenol and believed that non-branded products were half water. While problems with incorrect

dosage are noted in other populations (Ellen, Bone, and Stuart 1998), here errors are due to an incomplete or inaccurate understanding.

The Pharmacy as an Intimidating Site

It was initially hypothesized that low literates may have trouble getting a sufficient amount of help from pharmacists. The data collected from this part of the study was overwhelmingly clear that consumers relying on pharmacists for information might not be getting the information they really need. Out of the 80 consumer-pharmacist interactions I studied, only in 18% of the interactions did the pharmacist or the drug store employee ask the consumer if they had any questions. And in those cases, the pharmacist said “Do you have any questions?” In not a single case that I observed did the pharmacist point out any information specific to the drug the consumer was buying. In another 38% of interactions, the customer had to initiate the questions, and in 44% of transactions no interaction took place at all aside from the check out. When questions were asked, the answers were often times very limited. Also, I noted times when consumers asked for help locating an item; they were simply pointed to the correct aisle by the pharmacists. However, the problem of locating products within the aisle was often the most challenging aspect of the purchase process cited by the low literates with whom I spoke. These observations are alarming given that the main coping strategy of the low literate is to seek help from others. If the pharmacist is not fully explaining medications, and not probing for questions the consumers may have, the low literates success in obtaining information may be quite limited. Due to the stigma of low literacy, many low literates may wait until asked if they have a question before raising concerns rather than initiating the questioning themselves. To the extent that the low literates rely on the techniques mentioned in the data I collected, it is clear that there is a gap between what the low literates need in this pharmacist-consumer relationship and what they get. If these consumers are able to get the help they need and ask the questions that are necessary, perhaps they are able to cope. However, if transactions are at all representative of what I observed, it is obvious the low literates are not getting this help they so desperately need.

Chapter 5: Conclusions

The findings of this study suggest that, while coping mechanisms are employed by low literates in the drug store, often they make decisions based on little information. Many of the coping techniques that these individuals rely on in the general marketplace do not work in the drugstore (Adkins and Ozanne 2003). For example, packages and labels that employ pictures help the low literate locate and choose products. However, these pictures and simple words are not as prevalent on medicine packages as they are on food packaging. Thus, the low literate is left to do the best that they can, which mainly involves asking other people for help or relying on a trial-and-error approach. Furthermore, the quality and amount of information that low literates do obtain is unclear.

Marketing Issues

From a marketing standpoint, the results of this study suggest several main areas for improvement. First, packaging of medicines should be changed to use simpler, larger words and more treatment-related pictures. Many of the participants in this study mentioned how they can understand the simpler words or numbers used on medicine packages, but then have problems with the remaining information due to the complicated nature of the words. Companies need to ensure that the simple words are used for all necessary information. More pictures need to be used showing the type of medicine (Liquid vs. Capsule) and diagrams could even be used to show actual dosing (example: Picture of 2 pills and 2 clocks 4 hours apart). Many low literates use pictures for other product purchases and would greatly benefit from the same structure on medicine packaging. The addition of a “hot-line” phone number so that low literates can anonymously ask questions would also help in the safe usage of medicines.

The pricing of medicine needs to be made clearer. For instance, rather than unit pricing, medicine could be priced on an adult per dose basis, which would facilitate product comparisons. Low literacy is most often times highly correlated with lower economic status. This consumer group would benefit the most from being able to make these price comparisons but is unable to do so due to the complexity of the process.

Navigating the retail environment and actually finding the product is an important issue for low literates. Many respondents were unsure how to locate the medicine even after their physicians had advised them on what to get. Again, store signage could employ pictures to show the location of different types of medicines. One recommendation is to use actual medicine pictures or packaging in the aisle displays to show where products are located. Also, managers should avoid changing the store layout since many low literates memorize the location of products. Changing shelving placements creates confusion and decreases the chances that the low literate will recognize and locate the medicine. If changes need to be made to store layouts, they should be made gradually and management should have more sales people on hand to explain the changes and offer help.

More sales clerks could be placed throughout the store to offer non-threatening help finding and choosing products. One consistent theme was that the low literate consumers were loyal to stores with friendly employees. Since many times the pharmacist is occupied with prescription activities, these consumers would benefit from employees who could assist them. Of course, sales training would have to sensitize employees to the special needs of low literate consumers.

Public Policy

Currently the FDA regulations state that over the counter medications must be written no higher than a 10th grade level. Clearly this level of reading comprehension is too high for a large portion of citizens in our society. Given the reading ability of low literates, a more realistic labeling standard needs to be set. Policy makers need to ensure that the labeling process protects all consumers and that information is presented in the most basic way possible.

Pharmacists especially need to take an active role in ensuring that all consumers who pick up medicine are fully aware of any warnings or side effects which may be associated with that drug. Rather than pharmacists waiting for the patient to ask questions, they need to be proactive in providing important information, since it is clear that many low literates “success” involves hiding their true reading skills from others. Pharmacists need to be made aware that those patients who are of lower literacy will

most likely conceal that fact. As the most important source of accurate information, pharmacists need to be aware that, regardless of whether they are asked or not, they need to provide the necessary information and make no assumptions of basic literacy skills. However, given the aging of baby boomers and the stress that this group will place on the entire health care system, it may be unrealistic to expect that pharmacists will be able to meet all these demands on their time. Thus, improvements in packaging and labeling are of even greater importance since this represents the last safety net for the low literate consumer.

Perhaps the government can take a stand on this issue and implement social services designed specifically to aid low literates. One suggestion is to open centers where the low literate consumer could go and obtain information regarding their medication. Since they rely so much on help from others, having such a center would enable those without social others to get help.

Lastly, drug manufacturers need to be aware of the high number of low literates buying drugs. An increasing number of prescription drugs are now being sold over the counter, which is making the potential risk of misuse to low literates higher. Clear, easy to read warnings need to be stated boldly on these more complicated drugs to ensure that they are used correctly. We need a concerted effort to generate a set of labeling guidelines that are friendly to the low literate consumer.

Limitations of Data Collection

This study has limitations due to the number of respondents and the survey questions used. One of the largest problems found in this study was the questions I used to explore this area may not have been getting at the exact problem. Many of the questions I asked these respondents dealt with how they read side effects and warnings. When I asked the respondents about this issue, I repeatedly got answers that showed that they do not even pay attention to these issues. Another area I attempted to explore was the way in which these consumers choose their medication if they cannot read all of the information. Many of these questions generated a limited response because these respondents simply did not purchase their own medicines. They do not deal with many of

the problems that I thought they would, such as generic vs. name brand comparison or PM vs. Daytime, so the questions that probed these areas did not provide any insights.

Future Research

An important implication of this research is the need to conduct a future study that closely examines the relationship between pharmacists and low literate consumers. Asking other people for help is the main way these consumers get their medicine related information. What is the quality of information that is being received? How successful are low literates at hiding their reading level to pharmacist? Even when pharmacist take the time to explain, are low literate consumers able to use this information? Given the complexity of the warning materials, is there a better way to present this information to people with severely limited reading skills? One potential problem that still remains unanswered is what those consumers with little or no social support system do when they need medicine? Without the help from pharmacists or trusted family or friends, it is likely that low literates do without medicine or make potentially risky guesses.

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Appendix A: In-Depth Interview Protocol and Questions

Section 1: Rapport building

Introductions

I really appreciate you coming to meet with me today. Why don't we introduce ourselves first? I'll start. I am Nichole and I having been living in Blacksburg for the last 3 years going to school. I am originally from Richmond Virginia.

I am very busy right now—I am finishing up my schooling while at the same time trying to plan a wedding in Florida. Like you, I am a student. I go to Virginia Tech and I am working on a school project trying to understand how people buy medicines, whether it is a more serious illness that needs a prescription drug or a small minor problem that doesn't require a prescription. In order to graduate, I have to finish this project. I really need your help and I am grateful that you agreed to speak with me today. What I hope to do is to learn from you so I can write a report for businesses on how they can make it easier to buy medicine, especially if someone has trouble reading. So I am particularly interested in your experiences—both before and since you started coming to LVA.

Question: Would you mind just introducing yourself and telling me a little about yourself?

Section 2: Broadly Exploring the Medicine Domain

1. Prescription Drug

Where do you buy your prescription drugs? (Probes: How long have you been going? What do you like most/least about your drugstore? Are there drug stores that you do not like, and why?)

2. Pharmacists

Do you have a specific pharmacist that you go to and why? (Probes: What is your best/worst experience with a pharmacist? How helpful/unhelpful are they when you ask questions? What do you do if the dosage or warnings are confusing or complicated?)

3. Buying Non-prescription

Where do you buy your non-prescription (over-the-counter) medicines? (Probes: There are so many different cold medicines--how do you choose between medicines? Can you recall a recent time when you were particularly disappointed or pleased with a purchase? What do you do if you have trouble reading a label? Do you use home remedies for any illnesses?)

4. Packaging and Instructions

What would be a good/bad example of a package for a medicine? (Probes: What is the most helpful/unhelpful thing that can be found on a package? Do you think that the different colors and pictures that are used in packages are helpful or unhelpful?)

5. Advertising

Are there any ads for medicines that you have seen that you either like or dislike? (Probes: Have you tried any medicines after seeing them advertised? Are the ads that you have seen helpful/unhelpful? Explain. Can you usually identify a medicine in a store based on an ad you saw for it?)

6. Ideal

What is your ideal drug store? Ideal pharmacist? Ideal packaging? Ideal advertising?

Section 3: Coping Strategies

Past studies with members of LVA have found that many people do different things to make shopping for medicines easier. Can you tell me if you do any of these things? (Some of these may overlap with what we discussed earlier.)

1. Do you ever use your own strengths to make up for you not being able to read some things?
 - a. Recognize familiar words
 - b. Memorize packages (pictures, symbols, colors) to find them
 - c. Memorize layouts of stores
 - d. Use the pictures on the package to understand it
 - e. Use home remedies
2. Do you ever make buying medicine easier by developing habits like...
 - a. Go to the same store
 - b. Use the same pharmacist
 - c. Buy the same products
 - d. Avoid new products
3. Do you ever rely on people to help you out in situations where you might not be able to read something?
 - a. Ask the pharmacist
 - b. Ask a family member or friend
 - c. Ask a sales person
 - d. Ask another customer
4. If you run into problems buying medicine have you ever
 - a. Just gone without
 - b. Guessed at the proper dose
 - c. Not worried about the warnings and hoped for the best
 - d. Just buy the medicine and see if it works
5. In another study we found that some people try to hide that they have trouble reading. In the past, have you ever:
 - a. Used excuses when asking for help (e.g., forgot my glasses)
 - b. Somehow acted like you could read when talking to the pharmacist
6. Do you know someone who is not getting help to read? Do you know what they do when they buy medicine and can't read it?

Appendix B : IRB Consent Form and Submissions

Virginia Tech Department of Marketing Informed Consent Form

Project Title: Healthcare Literacy and the Low Literate Consumer

Overview: The goal of this study is to identify the ways in which low literate consumers get their healthcare needs met in the marketplace. Previous studies have identified that there are several coping mechanisms low literates use to buy goods, however little is known if these same techniques work when dealing within the healthcare domain. The main goal is to find out how you choose medicines when

- II. Risks:** The proposed research presents no known risks to subjects.
- III. Benefits:** The insights obtained from your participation in this study will be used to a) guide future research in this area, and b) provide insights for other researchers and practitioners.
- IV. Confidentiality and Anonymity:** Personal information will be collected by the moderator of the in-depth interview, however all responses given will be kept anonymous and confidential to anyone aside from myself. Any of your comments that I use in my paper will be attributed to a made up name.
- V. Compensation :** You will receive \$15.00 for participating in this study.
- V. Freedom to Withdraw:** If you do not want to participate, you are free to withdraw from the study at any time without penalty.
- VI. Approval of Research :** This project has been approved, as required, by the Institutional Review Board for Research Involving Human Subjects at Virginia Polytechnic Institute and State University.
- VII. Subject's Responsibilities:** I voluntarily agree to participate in this study.
- VIII. Subject's Permission:** I have read and understand the Informed Consent and conditions of this project. I hereby acknowledge the above and give my voluntary consent for participation in this project.

(Printed Name)

(Signature)

Outline for Protocol to Accompany IRB Request

Justification of Project

The goal of this study is to identify the ways in which low literate consumers get their healthcare needs met in the marketplace. Previous studies have identified that there are several coping mechanisms low literates use to buy goods, however little is known if these same techniques work when dealing within the healthcare domain. The contributions of this study will be useful in identifying ways in which policy makers, retailers or managers can help low literates better meet their needs in today's society. Low literate subjects need to be part of the study in order to get their first hand experiences rather than a literate person's point of view.

Procedures

This study will involve interviewing low literate consumers by ways of a series of in-depth interviews. The participants will be recruited by ways of area literacy centers where they go to learn to read. The goal is to interview 5-10 low literate consumers over the course of one month. Only one person will be interviewed at a time. The age and gender of this population does not matter to the study. Any low literate person whom volunteers to participate in the study will be interviewed.

The method used to collect data will be a series of in-depth interviews. Each interview should last between 30 minutes and 2 hours, depending on how much the participant will share. Participation in the interviews will be entirely voluntary. The interviews will be held at local literacy centers. These are places where the low literates are already coming to for help reading. The moderator will have a series of questions to explore with the participants regarding how they treat illnesses and more importantly how they buy medicine.

Please refer to the attached list of questions. This will be used as an outline for the interviews.

Risks and Benefits

There are no risks to participating in this study. All comments made in the interview will be voluntary and participation in the interview is voluntary.

Confidentiality/Anonymity

The researcher will have access to the names and other personal information (age, gender) about these individuals. After the data has been collected each participant will be given a new fake name in which they will be referred to in all references in the paper. The only people that will have access to the real names associated with the fake names are the researchers and the transcriber. Information in the interview will be audio taped in order to allow the researcher to get all of the information without copying down conversations in the interviews. The tapes will be kept by the researcher until they are transcribed, at which point they will be given to the transcriber and given back to the researcher immediately upon completion of the transcribing. The tapes will never be used as part of the presentation of data.

Informed Consent

Please see attached consent forms, which were signed by all participants.

Vita

Nichole D. Nardon

Nichole D. Nardon was born in Altoona, Pennsylvania in December of 1980. She graduated from James River High School in Midlothian, Virginia in 1999. In December of 2002, she graduated from Virginia Polytechnic Institute and State University, with a Bachelor of Science degree in Business with a minor in Marketing. In December 2003, she completed her Masters Degree in Marketing from Virginia Tech. While attending graduate school, Nichole held a graduate assistantship in the Marketing department. Upon completion of her degree, Nichole will work for Computer Patent Annuities in Alexandria, Virginia, as an Executive Project Analyst.