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Seniors' attitudes: oral health and quality of life

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Abstract: The objective of this study was to determine what impact, if any, oral health was having on the quality of life for selected seniors in Prince Edward Island, Canada. The attitudes of seniors towards oral health and its relationship to quality of life is important to define. This self-reported assessment provides information on this particular relationship. The research design was a random cluster sampling that covered all geographical areas of Prince Edward Island. It represented the cultural diversity within these geographical areas. The survey instrument selected was the Subjective Oral Health Indicators' Status, a validated survey instrument. This particular instrument addressed all the issues raised in the objectives. Data were analysed using Pearson's correlation with age and number of teeth present. The independent *t*-test was used to identify differences in responses by gender. Results of the survey showed identification of individual indicators that were having an impact on quality of life. Gender differences in responses were identified in four of the eight subject areas. The level of worry/concern was inconclusive because of the high non-response rate to the last question. Non-response rates increased with each topic in the questionnaire. More research is needed to identify clinical needs of seniors on Prince Edward Island. Qualitative study to determine attitudes and beliefs could provide groundwork for future programme design.

Key words: seniors; aged; oral health; quality of life; chewing ability; oral cancer; oral health indicators

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Introduction

The phenomenon of ageing is world wide; the trendy name is 'global greying'. With increasing life span comes a challenge to assure that longer life is one that has meaning and that allows for good health and a robust lifestyle (1). Ageing does not and should not mean a decline in health, ability or activity. Rather, 'older adults can expect an improved quality as well as an extended

quantity of life' (2). The proportion of seniors residing in health care institutions is declining (3), while rates and types of activity limitation have dropped significantly for adults aged 64–75 years, from 32% in 1985 to 26% in 1996. Younger seniors also show declining rates in change of health status with more seniors remaining healthier for a longer time (4).

The need for a better level of oral health for the elderly has been documented in the literature as a part of this need to provide optimum health through a longer life span (5). A decade ago, Entwistle was clearly defining a need for oral health promotion focus for dental and dental hygiene practitioners as it applies to the elderly. Oral health promotion has impacted positively on most of the society; however, the message appears to have been more readily adopted by the younger generations of the society. On Prince Edward Island, older adults see few applications of the strategies of assessment, treatment planning or preventive/maintenance plans. Where concerted efforts in areas of oral health and older adults have been delivered, the target population tended to be those seniors who were institutionalised. All studies agree that more help is needed to address the growing needs of this segment of the population. Additional studies are also identifying the increasing number of seniors who are remaining independent for a longer period (1, 2). As more seniors remain in their own home, their day-to-day oral care will be met primarily through their own efforts. Assuring a level of understanding among seniors on how to maintain their oral health at an optimum standard is a cornerstone to preventive dentistry for this segment of the population. Identifying seniors' perceptions with regards to oral health and quality of life is a first step in developing mechanisms to address their needs.

A healthy mouth is a premise for overall health (6). In dentistry, the concept of prevention of dental disease is over 50 years old, but the terminology and philosophy of the concept have grown. One of the research questions for this study is how seniors view their oral health. Is their definition of oral health merely the teeth or is there an awareness of the importance of the soft tissue structures within the oral cavity? Prevention of dental disease and maintenance of health in the oral cavity are now considered focused efforts requiring professional awareness and efforts with governmental support (5).

The oral cavity can be a mirror image of other areas of the body, and many systemic illnesses are manifested in the soft tissue or oral mucosa of the mouth (7). 'Oral cancer is a disease of older age, with age as the highest risk factor. About 95% of all oral cancers occur in patients over age 40 …' (8). Where oral health is compromised, overall health can be affected (6).

In 1999, Matear's review of the situation indicates that we can expect an increase in oral disease, specifically periodontal disease, in the future. He also sees levels of oral cancer remaining the same, unless awareness of the issue is raised. He expresses concern about a probable increase in lip cancer, which may manifest itself within the next 10–20 years. With increasing oral health concerns, there may be a corresponding increase in overall health concerns impacting on quality of life.

The loss of teeth used to be considered an inevitable fact of life for seniors. No longer is tooth loss a guaranteed outcome of long life, nor is the use of dentures an irrevocable conclusion of life. Like any other prosthesis, the use of dentures is dictated by the need to replace functional tissue. If teeth are kept in a functional state, there is no need to replace them with a prostheses. One issue of oral health specific to seniors is the long-term discomfort of dentures and the accompanying loss of the alveolar ridge (9). As we age, certain physiological factors affect our body and our mouth, dictating specific care in order to maintain function. Factors which have been identified as oral health issues specific to seniors are: access to care, awareness of the importance of oral health and physical ability to maintain oral health (10).

As with every other province, Prince Edward Island has a growing senior population. Currently, 13.1% of our island population is over the age of 65 years. It is estimated that 21% of our population will be over 65 years of age by the year 2017 (4). As this cohort increases, we must be prepared to meet the needs of this growing population for quality of life. A longer life should not mean simply added quantity. A longer life should mean a better life (2). Quality of life is positively correlated with health. Health is positively correlated with oral health. How seniors perceive the relationship of their oral health to the quality of life is the basis of this research study. The data collected from this study help to describe perceptions the seniors of Prince Edward Island have of the relationship between oral health and quality of life.

Methodology

The Subjective Oral Health Indicators' Status (11) was the tool that most readily fit the direction and philosophy of this study. It compiles a need assessment from the subjective input of the target population (12). It is user-friendly in format and readability, a factor strongly in its favour, given the literacy level of most of the seniors of the Island.

The tool consists of eight subject areas, using dichotomous variables for the first four topics and a Likert scale for the last four topics. Test validity was established early in its use (13). The subjects included ability to chew, ability to speak, oral and facial pain symptoms, other oral symptoms, eating impact, social relationships, activities of daily living and worry/concern.

At the time of this study, there were 18 204 seniors on Prince Edward Island. A survey of the entire senior population was

beyond the scope of this study. The research design was based on a cluster sampling of public housing facilities for seniors. The percentage of seniors living in non-institutionalised settings in Prince Edward Island is one of the highest of all provinces (4). The Regional Housing Authority under the direction of the various health regions for Prince Edward Island was the resource for information to locate large numbers of seniors. The public housing facilities on Prince Edward Island also represent geographical and cultural dispersion, reflective of the moderate diversity of the province. Franco phone communities were not selected as it was beyond the budget of this study to arrange for translation of the survey instrument. The units of public housing also had a rural/urban split that was representative of the Island population.

Of the 1000 seniors in residence, 547 were mailed surveys in the fall of 2001. There were 275 surveys returned. Answers from the surveys were given numerical value for analysis. The data were analysed using SPSS 8 for frequency distributions, Pearson's correlation coefficients and independent *t*-test comparing gender responses.

Results

Of the 547 surveys mailed, 275 were returned, resulting in a 52% response rate. While this response rate is lower than most, it is reflective of response rates for this population and Prince Edward Island. The five geographical regions of Prince Edward Island had different response rates with an average rate of 52%. The study had an over-representation of females at 76%, with 18% males and 5% whose gender could not be identified.

Slightly more than half of the respondents (51%) indicated they had no teeth. The mean number of teeth was 6.44 (SD 8.53). The mean age of the participants was 74.3 (SD 10.356). The range of ages was 44 years from 50 to 94 years. All topic areas analysed gave information that indicated some impact on quality of life. This impact varied between topics, but every subject area had a correlation to one or more of the demographic variables – age, number of teeth – or showed a difference in response based on gender comparison. Figure 1 shows the percentage of respondents reporting an impact for each of the subject areas.

The first topic dealt with ability to chew. A list of foods was offered with the participants asked to identify any food they had difficulty to chew. The results of this question showed a correlation between age and number of teeth. The number of teeth correlated to ability to chew produced a Pearson's $r = -0.144$ ($P < 0.05$). The independent *t*-test identified gender differences in their reported ability to chew. Males were two times as likely to indicate chewing dysfunction when it came to meat. Males reported more chewing difficulties than females in all categories of food.

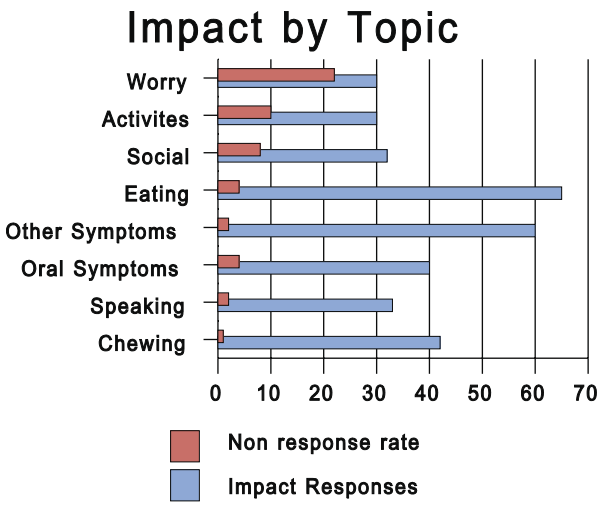

Fig 1. Non-response rate and percentage impact rates by topic.

With regards to the ability to speak, there was a relationship between this variable and age (Pearson's $r = 0.278$; $P < 0.05$). Younger age cohorts (age 50–59 years) were less likely to report an impact on ability to speak. The impact on ability to speak increased with older cohorts. Figure 2 illustrates the comparison of responses by age cohort to the various questions on the topic of ability to speak.

When it came to the subject of oral/facial pain symptoms, the most common complaint was pain or discomfort from a denture with 21.8% experiencing some pain or discomfort. Pain in the jaw had a 13.5% affirmative response and burning sensations in the tissue was positive for 14% of the respondents. The discomfort from dentures was virtually the same for males (21%) as compared to the females (22%). The concerns about oral/facial pain symptoms increased with age (Pearson's $r = 0.278$; $P < 0.01$).

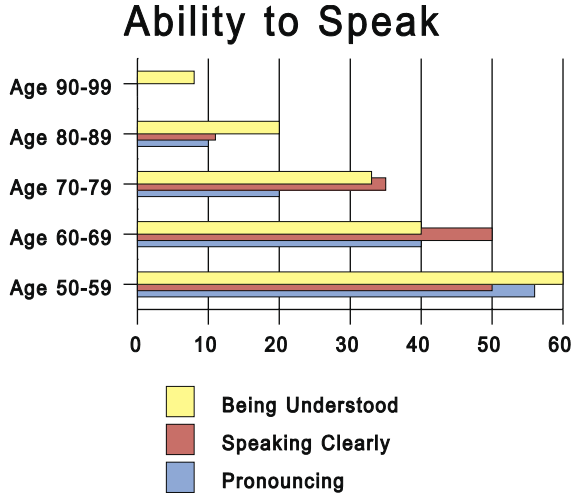

Fig 2. Comparison by age groups of ability to speak.

With other oral symptoms such as mouth ulcers, cold sores, bleeding gums and dry mouth, the subject again correlated to age (Pearson's $r = 0.132$; $P < 0.05$). The highest percentage of concern was 41% of respondents who had experienced dry mouth within the last 4 weeks. Twenty-six per cent reported bad breath and 18.7% reported difficulty with sore gums. When it came to unpleasant taste in the mouth, 23.4% responded 'yes'. Within the gender comparison, males tended to report fewer concerns than females. Sixty per cent of the males were concerned about their breath. Females tended to focus more on personal discomfort such as sores in the mouth or bleeding gums.

The survey also examined the issue of enjoyment of eating and social concerns around food. The impact of eating on quality of life for this study showed a correlation to age (Pearson's $r = 0.131$; $P < 0.05$). Males consistently scored higher in concerns over enjoyment of foods and inability to eat foods they liked; females expressed more concern about the length of time it took for them to finish a meal.

The results of the *t*-test for gender differences showed a statistical significance ($P < 0.05$) when social impact responses were analysed. Within the female data, 63.9% stated they never had concern over their oral health in social situations. There were approximately 45% of males and 26.1% of females expressing concern 'sometimes' to 'all the time' about social situations being affected by oral health. On the questions of embarrassment about their teeth, and avoiding laughing or smiling because of the look of their teeth, males were more than two times as likely to identify concerns compared to females.

The impact of oral health on day-to-day routine was also measured. Some of the indications of disruption to day-to-day routine were difficulty sleeping and interruption in daily routine. Of the respondents, 32.8% reported some disruption in their daily routine based on oral health issues. The most common complaints were on difficulty in sleeping and staying home more than usual. The impact on daily living correlated to age (Pearson's $r = 0.283$; $P < 0.01$); with increasing age, there was an increasing impact. There was also a significant difference when responses were compared by gender, according to the result of the *t*-test. Figure 3 shows the impact responses by specific indicator for males, females and the total group.

In terms of worry/concern about their oral health over the past year, 72.7% never worried about the appearance of their teeth; 27.3% did have some concern. Among the respondents, 61.1% did not worry about the health of their teeth. A large number of participants did not give a response to this topic. There was no difference by gender in levels of worry/concern. The worry/concern levels did correlate to the number of teeth present (Pearson's $r = 0.155$; $P < 0.05$) and age (Pearson's $r = 0.167$; $P < 0.05$). People who indicated they had difficulty eating carrots and apples had a lower level of worry/concern about their overall health.

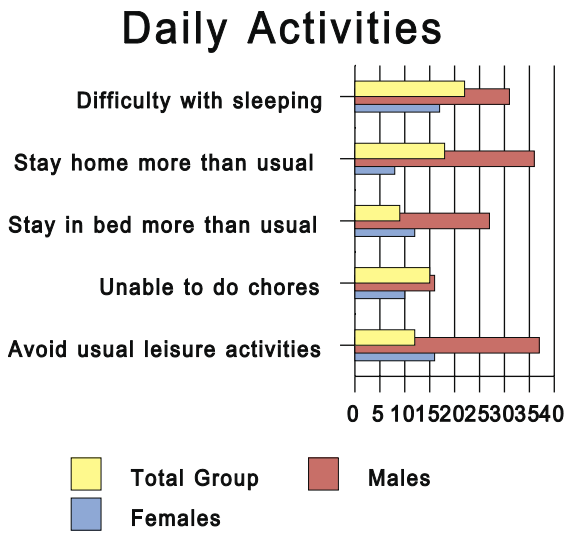

Fig 3. Impact on activities of daily living by indicator.

In assessing the data by age, there was a declining pattern of concern with increasing age. The age group 50–59 years had 61.9% reporting they worried about their teeth sometimes to all the time. The valid percentage of people expressing worry/concern by age cohort is shown in Fig. 4.

Discussion

The demographic distribution of the participants shows that males were under-represented. The ratio of males to females on Prince Edward Island changes with differing age cohorts (4). However, the higher representation of females in this study is still not comparable to the Statistics Canada data. The ratio of males

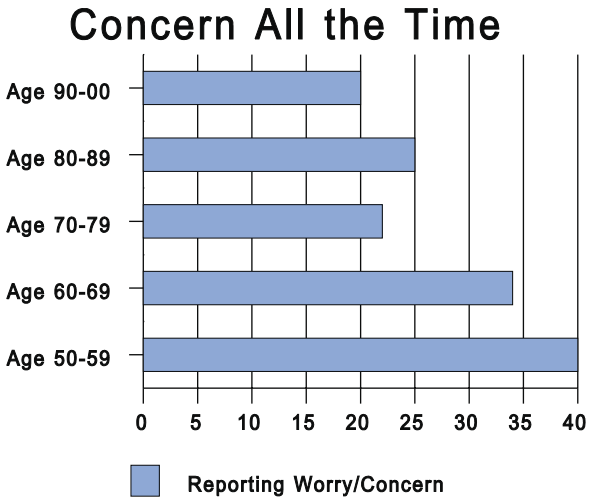

Fig 4. Impact of worry/concern all the time by age cohort.

to females in the public housing facilities is very similar to the ratio found in this study. However, it is more conservative to assume that females are over-represented in this study. The higher representation may be indicative of the increased likelihood of females moving to senior housing rather than maintaining a home on their own.

Using the *t*-test for comparison, gender differences in responses were identified on four of the eight topics evaluated in this survey. Males had consistently expressed more concern over things that related to food. Ability to chew and enjoyment of food were significantly more male-oriented concerns. When it came to personal discomfort, females were more likely to report pain or oral symptoms that were uncomfortable. Is this difference a reflection of male stereotypes in this age group being more stoic by not acknowledging pain or discomfort?. Are females as the primary care givers in family units more likely to report symptoms of pain or discomfort? When compared statistically, males are twice as likely to develop oral cancer as females at every age range over 50 years (7).

The aesthetic concerns of males are unusual with their high responses to concerns about bad breath and unpleasant taste in their mouth. Are they then more likely to use mouth wash, or more likely to perform oral physiotherapy to assure they have fresher breath? Males were also more concerned about their activities of daily living than women were. While individual topics showed gender differences when it came to overall worry/concern, there was no significant difference in male/female responses. This identifies a discrepancy in attitudes.

The independent variable of age was a significant factor in this research. The range of 44 years was higher than anticipated, and does provide considerable data for seniors under the age of 70, something which was considered a limitation of this study. The broad range also represents two generations of seniors. Age correlated to six of the eight topics in this analysis. It must be noted that although a correlation was established between age and various topics, the correlation coefficient values were small; thus, the relationship established is not strong.

With age, the ability to speak had an impact that declined with age. Participants in this study tended to report fewer communication difficulties with age. The younger cohorts expressed more concern about speaking clearly and being understood. The reported symptoms of oral/facial pain increased with age. Discomforts in the mouth tended to be reported more with each cohort. As we look at the literature on concerns of oral health, ageing and quality of life (4, 14, 15), this is not surprising. When comparing eating ability, the different age cohorts reported different concerns. The older cohort was less likely to respond about problems with enjoying eating. Does eating become less of a priority for them, or are there fewer problems in their ability to enjoy food? In terms of social impact, the results steadily declined from 50–59 to 70–79 years, rising again slightly with the older two age groups. The younger three age groups also reported more teeth, so they may feel more aesthetically comfortable with their smile and appearance.

With regards to worry/concern about their teeth/oral cavity, the most significant age correlation occurred. The younger the age group, the more likely they are to express worry/concern about their oral health. Again, this was the cohort with most of the teeth. In looking exclusively at the younger cohort, they had the highest level of concern about oral health, the greatest number of teeth and the most frequently reported impacts on activities of daily living and social situations. This age cohort will still tend to utilise dental services the most (1) and will retain their teeth longer than other cohorts in this study.

Statistics Canada Health Report 1999 cites that self-reported health assessments tend to be overly optimistic. The majority of these (65–80%) will indicate good to excellent results in health-related issues. Based on these results, it would be indicated that seniors are more concerned about oral health than one would predict. However, in this study, the high rate of non-response to this question tends to limit the conclusions that can be made. The high non-response rate could have occurred for a variety of reasons, the respondents may have been getting tired of answering questions, or the isolation of the last topic on the last page may have been overlooked by the respondent. The non-response rate did tend to increase with each topic (Fig. 1). The hand-written comments on some of the surveys indicated that seniors did not define oral health in the same context as the dental professional would. In the absence of teeth, oral health was something unrealistic to them.

Looking at the oral/pain symptoms report, one-third of the participants were experiencing some oral symptoms impacting on their overall health. In the analysis of the data, the mean indicates that often more than one symptom was reported by the respondents. Oral/pain symptoms are certainly factors which any age cohort would find annoying, if not intolerable. Suffering discomfort while eating or experiencing pain from a denture is a daily occurrence for these people. The mouth, as the most sensitive organ of the body, has exaggerated responses to any discomfort. Discomfort or pain while eating will reduce the ability to ingest adequate amounts of food or digest food in the appropriate manner.

What is the relationship between the ability to chew, the ability to ingest food and the worries/concerns about their mouth? The impact of chewing ability was significant according to the participants, with close to half of them reporting some level of ability

impact. The ability to chew fibrous foods such as carrots and apples has an important impact on the choices a senior will make regarding foods to eat. Males identified more difficulties with chewing than females and expressed a much higher concern over inability to chew meat, hamburger and steak specifically. Gender differences in this category have not been noted in previous studies. For males in this study, the ability to chew was of much greater concern in their lifestyle than the other topics queried.

Conclusions

Are seniors on Prince Edward Island experiencing some impacts of oral health on quality of life? Yes, the results indicate that many are experiencing problems. However, the majority of responses are not indicating a level of worry/concern. Based on the correlation of number of teeth to worry/concern, the literature review and qualitative comments on the surveys, it may possibly mean that the seniors on Prince Edward Island are defining oral as the presence of teeth and health as the absence of disease. Without teeth, perhaps they do not perceive that an oral health situation exits. Seniors are not expressing an overwhelming concern about their quality of life as it relates to oral health. They are, however, expressing a good deal of concern about certain aspects of oral health.

What we do not glean from this study are other factors impacting on seniors' lives, such as other health issues, medications, economic pressures, personal beliefs around health and wellness. It was not the intent of this research study to analyse the broad palette of health as it contributed to seniors' quality of life.

This study indicates the need for more research on the oral health needs of older adults on Prince Edward Island. A clinical epidemiological study and a qualitative analysis of attitudes, beliefs and values would greatly add to the data available on seniors and oral health. This would provide a rounded picture of perceived or felt needs and clinically diagnosed needs. Qualitative interviews with seniors would help ascertain what health promotion approaches would be most effective in raising levels of awareness and changing behaviour patterns. Certainly, there is a vast amount of work to do on Prince Edward Island in relation to seniors/oral health/health and quality of life. Health promotion strategies related to oral health and seniors would need to be defined and implemented in conjunction with the senior community. Dental professionals need to be aware of the type and quantity of dental malady seniors are most concerned with.

The perceived needs of seniors on Prince Edward Island and the identified needs based on professional interventions could become the backdrop for a dynamic client-centred oral health service for seniors on Prince Edward Island. Seniors do not have to settle for oral health as merely the absence of disease. Educating seniors to this realisation can be a challenging task for all those concerned about oral health on Prince Edward Island.

The Prince Edward Island Government pioneered the concept of children's dentistry delivered in mobile trailers to areas where access to care was limited. This programme has provided outstanding service to children and made drastic improvements in the status of oral health for children in this province. The Children's Dental Care Programme was developed in response to identified need, where access to care was an issue. The same situation exists today with the seniors of this province. The innovative philosophy of the programme could be applied to the senior population to assure quality dental care for children and seniors. Development of a client-centred universally accessible seniors' programme to service dental needs, provide education, implement health promotion strategies and work to improve the oral health of the seniors of the island would be an exciting and innovative initiative.

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