



Price County Dental Services Impact Analysis: Quality of Care and Quality of Life in Northern Wisconsin

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Problem Statement: An examination of epidemiologic data from the partnership between the Robert Wood Johnson Foundation (RWJF) and the University of Wisconsin-Population Health Institute (UWPHI) consistently ranked the studied service county in the lower quartile of the state for both Quality of Care (QoC) and Quality of Life (QoL) measures. Researchers determined QoL might be more accurately measured using a satisfaction survey. Families were asked about their perceptions of care received and if their QoL was impacted.

Purpose: The purpose of this follow-up study was to identify how families served through county-based health programs felt about the QoC received, and how QoL was impacted.

Methods: A cross-sectional research design was used. An electronic survey was sent to a convenience sample of families with children receiving care (n=108). The survey consisted of 25 closed-ended questions using a four-point Likert scale. Satisfaction survey questions had previously established content validity and reliability. Informed consent was obtained after IRB approval (UWSP-expedited 3242014) before survey administration. Responses were de-identified and kept confidential. Descriptive statistics were used to report the data.

Results: A response rate of 27.2% (n=30) was obtained. Overall satisfaction with the public health facility received ratings of either excellent (43%) or good (57%). Of the 30 participants, 29 reported

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families' dental needs were addressed with either an excellent (63%) or good (37%) overall quality rating. Overall, family members reported complete satisfaction with the care received, and the QoL was positively influenced (100%).

Conclusions: Data documented families in county-based programs were satisfied with the QoC received and reported that QoL in comparison to state and national epidemiologic data.

Keywords: Quality of life; quality of care; preventive services; public health; access; socioeconomically disadvantaged; federally qualified health centers.

1. INTRODUCTION

Poor oral health in children leads to a threefold increase of missed school days as well as poor academic performance [1]. Early interventions are important to prevent against a lifetime of oral health issues [2-13]. Dental diseases can influence a child's development, function, and behavior in addition to academic performance [2-7, 14-24]. Quality of life is also impacted [5-11]. Early caries is one of the most serious and costly dental diseases effecting children [1-3, 20-29]. Evidence based best-practices coupled with using dental and community-based practice models, including preventive measures like sealants, fluoride varnishes, and various rinses can help prevent caries [7, 9-12, 25-33].

Price County Public Health Department provides dental health services within the school system. These programs include providing dental education; preventative techniques including brushing and flossing; oral screening, fluoride, varnishes, and sealants [14-15, 31-33]. Holistically, additional programs are offered within the community across the lifespan, including youth, pregnant women, and seniors. The researchers collaborated with the Price County Public Health Department to analyze how the quality of care received impacted the quality of life for patients and families receiving care.

Epidemiologic results from the Population Health Institute [18] routinely ranked the service county in the lower quarter of the state for both QoC and QoL measures. Olmsted, Rublee, Zurkawski and Kleber [18] determined QoL results may better be measured within the service area using a satisfaction survey for identifying people's perception of the care received, and if their quality of life was improved because of it. This recommendation was the foundation for this study. A similar study was conducted in Massachusetts at six different elementary schools [10]. The clinical implications of this study noted comprehensive caries prevention programs could contribute toward accomplishing national health goals [7, 9-12, 25-33].

The overarching goal of the research was studying how health for families with economic disparities & cultural differences in the service communities was impacted. Price County is a rural, socioeconomically disadvantaged community in Northern Wisconsin [12, 14-18]. The Price County Health and Human Service Department offers a variety of oral health services through its public health department serving individuals across a lifespan, and within varying locations, including schools and nursing homes [14-15]. Data were gathered as a follow up and after a three-part research project identified that an examination of epidemiologic data from the partnership between the Robert Wood Johnson Foundation (RWJF) and the University of Wisconsin-Population Health Institute (UWPHI) consistently ranked the studied service county in the lower quartile of the state for both Quality of Care (QoC) and Quality of Life (QoL) measures [18]. Researchers determined QoL might be more accurately measured using a satisfaction survey within the service community rather than data renormed annually. Researchers determined the need to ask families directly about their perceptions of care received and if their quality of life was impacted.

2. PURPOSE AND RESEARCH QUESTION

Thus, the purpose of this follow-up study was to identify how families served through county-based health programs felt about the QoC received, and how they perceived their QoL was impacted. Families selected for survey completion had received care thru the various community and school-based programs for caries prevention thru fluoride, supplement, or sealant programs [14-18]. A dental hygienist working collaboratively within a local area health department provided the educational & preventive care services described, and employing a consultative/referral model [32], forwarded individuals requiring restorative care to local community dentists for follow up. Researchers Questioned: How can we more accurately identify the impact of care services

offered? The RWJ & UWPHI information was reformed yearly, changes & additions in information not always relevant to specifically considering dental services offered and used by participants in service area. Quality clinical care can result in improved community health outcomes and determinant metrics, ultimately impacting the quality of life within a community [3-12, 16-19, 33]. Thus, researchers determined gathering data directly from the service community from the parents & guardians of individuals receiving services was the most prudent way to identify how they perceived the Quality of Care (QoC) received was and its' subsequent impact on Quality of Life (QoL) of individuals served.

3. METHODOLOGY

A primary, cross sectional study design was used. The study population included all client families located within a rural service area that had been previously served through one of the prevention programs. A convenience sample of families with children that received care was used (n=108).

Data about overall satisfaction, Quality of Care (QoC) and Quality of Life (QoL) was collected via an electronic survey with twenty-five closed end questions using a four-point Likert scale following Institutional Review Board (IRB) approval. Study population was defined as any parents or guardians of children that had been enrolled in the service programs provided through the public health department. Descriptive statistics were used for data analysis and result reporting. Quality clinical care can result in improved community health outcomes and determinant

metrics, ultimately impacting the quality of life within a community 3-12, 16-19, 33. Prior research findings are related to the results of this follow up, descriptive study 16-18.

4. RESULTS

4.1 Demographics

Of the parents/guardians that participated in the survey, 29 were female and 1 male. Survey demographics included 27 mothers, 2 grandmothers, and 1 father, ranging in age between 27 to 58 years.

4.2 Survey Results

Overall satisfaction of the services provided by the Price County Public Health Department can be seen in Table 1. Data presented in text is rounded. The facility had an overall satisfaction rating of excellent (43%) and good (57%). The thirty participants identified their families' dental Quality of Care needs were addressed with an excellent (63%) or good (37%) rating. According to the data, participants generally felt that they, their children or wards were respected by staff associated with their treatment. The majority rated the facility on respect shown by staff as excellent (60%), followed by good (33%), and fair (7%). Another consideration associated with respect is providing privacy. Data suggests privacy was ultimately provided by the staff during treatment (90%); however, other respondents rated privacy provided as either fair (7%) or poor (3%). Overall, the parents and/or guardians of children receiving care felt the Quality of Life was improved (100%).

Table 1. Survey summary: overall satisfaction; quality of care; quality of life

Metric	Response selections				Totals:
	Excellent	Good	Fair	Poor	
Overall Satisfaction	43.33% (13/30)	56.67% (17/30)	0%	0%	100%
Overall Quality of Care	63.33% (19/30)	36.67% (11/30)	0%	0%	100%
QoC: Respect	60% (18/30)	33.33% (10/30)	6.67% (1/30)	0%	100%
QoC: Privacy	90% (27/30)	0%	6.67% (2/30)	3.33% (1/30)	100%
Overall Quality of Life	100% (30/30)	0%	0%	0%	100%
Recognition of Future Needs	50% (15/30)	40% (12/30)	10% (3/30)	0%	100%

n=30

Hygienists make restorative treatment referrals using a consultative referral model [32] for restorative or additional required care. Satisfaction ratings of the Price County Public Health Department interprofessional team related to related to informing parents/guardians of future dental care needs for their child was rated at excellent (50%), good (40%) or fair (10%). Specific survey data are detailed in Table 1.

4. DISCUSSION

4.1 Overall Satisfaction QoC and QoL

The families reporting ranked their overall satisfaction as either excellent (43%) or good (57%). Similarly, the overall quality of care rankings also fell within the excellent (63%) or good (37%) categories. Parents and guardians of children served through these community care services also noted that the quality of life of their families was improved (100%). Children lost less school days due to dental care needs or illnesses associated with the oral cavity. The direct assessment of these care measures versus the indirect methodology used with the Robert Wood Johnson Foundation (RWJF) and the University of Wisconsin-Population Health Institute (UWPHI) findings were significantly different [18]. Both the RWJF and UWPHI [18] indirect data measures consistently ranked the studied service county in the lower quartile of the state for both Quality of Care (QoC) and Quality of Life (QoL). The results of this study confirmed through using direct assessment that those impacted by the Care received the results clearly differed.

4.2 Quality of Care: Respect and Privacy

Closer analysis of the data related to satisfaction of family and guardian rankings differed. Questions relating to how people perceived they themselves or their children, grandchildren, ward, were treated during treatment and care related to respect ratings differed. Respect rankings were 60% excellent, 33% good, and 7% fair. Data related to perception of personal privacy before, during, or after treatment also demonstrated an area for the community care team to consider. Ninety percent (27/30) felt the protection of their privacy was excellent, however, 7% (2/30) and 3% (1/30) ranked privacy protection at fair or poor.

5. RECOMMENDATIONS

Based on the break down of data related to the Quality of Care (QoC) measures for respect and

privacy, several recommendations were made for the care team. The recommendations included a refresher course for all providers about health privacy laws and application so satisfaction rates would be improved during future care services. Another recommendation was providing training for all staff and volunteers about respectful treatment and conduct. Individuals in families who are already marginalized based on socioeconomic or ethnic status and having an inability to access treatment and care are already in a vulnerable position when it comes to seeking care and assistance. One means to make families and individuals comfortable is by treating them with dignity, respect, care and kindness. Various modalities could be used for providing training, including online, correspondence, interactive interviewing modules and one on one case analysis. In a time of heightened awareness related to equity, inclusivity, and diversity, meeting patient and family care needs in a dignified manner while treating them the way they want to be treated is important for the care team to apply. The final recommendation related to this research is to replicate the various phasic studies completed in this one rural, socioeconomic disadvantaged and culturally diverse community in other communities with similar demographics. In Wisconsin, five other counties having similar community characteristics, including being a Health Professional Shortage Area (HPSA), provided informed consent to have archived data analyzed similarly. Results may or may not be similar, or dissimilar.

6. CONCLUSION

Overall, results from this satisfaction survey documented descriptively different results than those reported within UWPHI epidemiologic data from the partnership between the Robert Wood Johnson Foundation (RWJF) and the University of Wisconsin-Population Health Institute (UWPHI). Data documented families in county-based programs were satisfied with the QoC received and reported that QoL in comparison to state and national epidemiologic data. Families participating in the county-based care programs believed their Quality of Life was improved by the Quality of Care that was received. Most families felt their privacy was protected and that they were treated respectfully, but use of training in these realms for service volunteers could be used to improve results on future metrics.

ETHICAL APPROVAL

As per international standard or university standard ethical approval has been collected and preserved by the authors.

CONSENT

As per international standard or university standard, Participants' written consent has been collected and preserved by the author(s).

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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