Relation Between Parents’ Education and Residence with Knowledge and Attitude on Children Oral Health

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ABSTRACT

**Background:** Parents’ knowledge and attitude on children oral health will form their childrens’ underlying behaviour which will either support or not their children’s oral health. **Objective:** To know whether there parents’ level of education and residence (coastal vs urban areas) are related with their knowledge and attitude regarding the oral health of children age 3-6 years old. **Materials and Methods:** This research is a cross sectional study using survey. The samples that were studied were 41 parents of 3-6 years old children in PG/ TK Benih Kasih Surabaya and 41 parents of 3-6 years old children in TK/ PAUD Benih Prima Batam. The method of collecting data is by non-experimental survey. Statistical analysis on the relationship between variable was performed using Spearman Rank Correlation. **Results:** The research showed that level of education has a positive relationship with knowledge and this relationship goes both ways. Level of education also has positive relationship with attitude and vice versa. On the other hand, residence has insignificant relationship with knowledge. Meanwhile, residence has negative relationship with attitude. **Conclusion:** The higher the level of education of parents relates to higher level of knowledge and attitude regarding the oral health of children and vice versa. Meanwhile the residence, whether coastal area of Batam or urban area of Surabaya, has no relationship with the knowledge. Parents in urban area of Surabaya, on the other hand, has significant relationship with positive attitude toward children’s oral health, and this relationship goes both ways.

**Keywords:** Knowledge, Attitude, Level of Education, Coastal Area, Urban Area

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INTRODUCTION

Awareness on the attitude of maintaining one's own oral and dental hygiene is the most important thing in maintaining dental and oral hygiene.1 Parental education factors can influence attitudes in determining the dental health status of children, because as parents need to teach their children how to care for and brush their teeth properly and regularly take their children to the dentist to check their dental health status.2 Parental knowledge and attitudes is very important in underpinning the formation of attitudes that support or do not support children's dental and oral hygiene, because children's attitudes will reflect the attitudes of their parents.34 If parents do not pay attention to their attitude in dental and oral health care, children who still have the habit of imitating their parents' attitudes will be very vulnerable to dental and oral diseases due to poor self-habits in maintaining oral hygiene and health.5 During this period, dental diseases such as caries are still often ignored by many parents who think that tooth decay is a common thing in children who will replace the primary teeth with permanent teeth.6 Whereas when caries is not treated, children will experience pain, discomfort, disability, acute to chronic infections, disturbances in eating and sleeping and can allow treatment in hospital which causes high medical costs and reduced learning time in school.7

The results of the 2018 Basic Health Research or Riskesdas stated that 93% were children at an early age, namely in the age range of 5-6 years, experience cavities. Preschooler experience the process of caries formation due to the lack of attention of parents to food daily and brushing teeth. At the age of 3-5 years, the child starts doing something based on his wishes one of them started trying various flavors of food in any form so that it can have a bad impact on the teeth if the child they did not pay attention to the solution to prevent caries.8 This shows that there is a disturbance in the quality of life of school children in Indonesia which results from the lack of preventive measures by parents at an early age in order to avoid cases of tooth decay in children in the future.9 The low encouragement from parents can cause children's teeth cleaning activities to be less than optimal because what children see, they will imitate and when parents do not set good examples, children will also not pay attention when parents give orders to clean teeth.10 Efforts to take care of children's teeth at an early age still really need parents who can encourage their children to provide directions for caring for dental and oral health properly and correctly because children's knowledge about dental and oral health is still lacking compared to adults.11 Therefore, awareness from parents is needed to educate their children from an early age about dental and oral care in order to avoid impaired function, activity, and decreased work productivity that will affect the quality of life.1 In children aged 1-7 years, the teeth that grow are deciduous teeth which will be replaced with permanent teeth, but children must be exposed to dental health care as early as possible so that dental problems are not more complicated and more expensive to treat when the teeth are mature grow.2

Differences between urban and coastal areas can be seen in terms of education, economy, technology, culture, and consumption patterns which are very different in coastal and urban areas.12 This is also reinforced by the results of the Basic Health Research (RISKESDAS) which also shows data in 2013 that the percentage of children who have dental and oral problems in coastal areas is 23.2% and in urban areas is 31.1%.13 This shows that although the percentage of children who have dental and oral problems in coastal areas is less than in urban areas, the percentage of children receiving dental health care in coastal areas is much lower than in urban areas. In terms of the level of education, coastal
areas have a fairly low level of education, which is generally only elementary school graduates, while in urban areas the level of education is up to advanced level, namely graduating from high school and graduating from college. On the economic side, most of the people living in coastal areas have a livelihood as a fisherman and people living in urban areas have a livelihood as an employee or office worker. In terms of technology, understanding of technology in coastal areas is still relatively simple and traditional, while in urban areas it is classified as advanced and modern. In addition, on the cultural side, coastal communities are still very strong and apply their cultural traditions more in their daily lives, while urban communities tend to be more open to new knowledge and teachings so that culture is no longer the only reference in their daily lives. In terms of consumption, caries prevention can be overcome by increasing the use of fluoride which is obtained from the food and drinks we consume every day. The presence of fluoride contained in marine fish which is the daily food of people in coastal areas is thought to reduce the number of caries incidence.

Surabaya is chosen as an urban area representative due to well known fact that it is the second biggest city in Indonesia with a good health related performance. The city’s performance is supported by East Java Health Office which monitor health status especially amongst the children. On the other hand, Batam is chosen due to the coastal aspect and recently it has rather mediocre health related performance. For instance, the Batu Aji Health Center nutrition report in 2016, indicated that Batam is lacking in term of children health monitoring performance.

This study aims to determine whether there is a relationship between the level of education of parents and the place of residence of parents on the coast (Batam) and in urban areas (Surabaya) with knowledge and attitudes related to dental health of children aged 3-6 years.

MATERIALS AND METHODS

This study is a cross sectional study using a survey as the method of collecting data. The samples studied were 41 parents of children aged 3-6 years at PG/TK Benih Kasih Surabaya and 41 parents of children aged 3-6 years TK/PAUD Benih Prima Batam and who are still actively attending the school in 2020 with a purposive sampling technique.

Google Form was used for the online data collection online which was carried out for approximately two weeks in October 2020. Statistical analysis was carried out using the Spearman Rank Correlation and this particular test took place in August 2022, is a continuation of the previous research. The research’s data is ordinal or ranked in nature hence the Spearman correlation is used instead of Pearson’s correlation coefficient. This approach is chosen to test the relationship between variables which may not have linear relationship. The level of education in particular is level or ranked data and Spearman correlation is perceived to be more suited to test its relationship with knowledge and attitude toward children oral health variables.

The level of education variable is measured by five level of education which are (1) elementary, (2) junior high school, (3) high school, (4) university bachelor, and (5) university master. The residence variable is measured using dummy variable where 0 represent urban area (Surabaya) and 1 represent coastal area (Batam). The knowledge variables is measured using 10 likert scale questions to assess the level of parents knowledge on children oral health. The attitude variable is measured using 10 likert scale question also and these questions is set to assess the attitude toward children oral health. These questions is detailed further in Appendix 1.
RESULTS

General Data of Respondents

Figure 1. Frequency distribution of respondents’ child in PG/TK Benih Kasih Surabaya (Urban Area) and TK/PAUD Benih Prima Batam (Coastal Area) by gender.

Figure 2. Frequency distribution of respondent child in PG/TK Benih Kasih Surabaya (Urban Area) and TK/PAUD Benih Prima Batam (Coastal Area) based on the age of the child.

Figure 3. Frequency distribution of parental respondents in PG/TK Benih Kasih Surabaya (Urban Area) and TK/PAUD Benih Prima Batam (Coastal Area) based on the gender of the parents.

Figure 4. Frequency distribution of parental respondents in PG/TK Benih Kasih Surabaya (Urban Area) and TK/PAUD Benih Prima Batam (Coastal Area) based on the age of the parents.

Figure 5. Frequency distribution of parental respondents in PG/TK Benih Kasih Surabaya (Urban Area) and TK/PAUD Benih Prima Batam (Coastal Area) based on the education level of parents.

Figure 6. Frequency distribution of parental respondents in PG/TK Benih Kasih Surabaya (Urban Area) and TK/PAUD Benih Prima Batam (Coastal Area) based on parental occupation.
Specific Data for Respondents

Figure 7. Parents' level of knowledge about children's dental and oral health in PG/TK Benih Kasih Surabaya (Urban Area) and TK/PAUD Benih Prima Batam (Coastal Area)

Figure 8. The level of parental attitudes about children's dental and oral health in PG/TK Benih Kasih Surabaya (Urban Area) and TK/PAUD Benih Prima Batam (Coastal Area)

Table 1. Test the validity and reliability of the Knowledge variable (P)

<table>
<thead>
<tr>
<th>Group</th>
<th>Item Number</th>
<th>Validity</th>
<th>Coefficient Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Correlation (r)</td>
<td>Probability (p)</td>
</tr>
<tr>
<td>Knowledge</td>
<td>Knowledge 1</td>
<td>0.314**</td>
<td>0.005</td>
</tr>
<tr>
<td></td>
<td>Knowledge 2</td>
<td>0.345**</td>
<td>0.001</td>
</tr>
<tr>
<td></td>
<td>Knowledge 3</td>
<td>0.659**</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>Knowledge 4</td>
<td>0.450**</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>Knowledge 5</td>
<td>0.708**</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>Knowledge 6</td>
<td>0.676**</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>Knowledge 7</td>
<td>0.151</td>
<td>0.177</td>
</tr>
<tr>
<td></td>
<td>Knowledge 8</td>
<td>0.151</td>
<td>0.177</td>
</tr>
<tr>
<td></td>
<td>Knowledge 9</td>
<td>0.395**</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>Knowledge 10</td>
<td>0.477**</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Source: Questionnaire primary data (processed), August 2022.

The Results of the Validity and Reliability of the Questionnaire

Based on the data from table 1 above, it shows that all question items for the knowledge variable have a Pearson product moment correlation index value (r) which is greater than 0.3 except for the knowledge 7 and knowledge 8 question items (with an r of 0.151). Knowledge question items 7 and 8 were omitted from the test to ensure the validity of all knowledge variable question items. The knowledge variable question items have a Cronbach alpha coefficient of 0.612 which means that all question items for the knowledge variable (P) are reliable for the next test.
Table 2. Test the validity and reliability of the Attitude variable (S)

<table>
<thead>
<tr>
<th>Group</th>
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<th>Validity</th>
<th>Coefficient Alpha</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Correlation (r)</td>
<td>Probability (p)</td>
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<tr>
<td>Attitude</td>
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<td>0.000</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>0.489**</td>
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<td>3</td>
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<td>0.618**</td>
<td>0.000</td>
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<tr>
<td></td>
<td>5</td>
<td>0.404**</td>
<td>0.000</td>
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<td></td>
<td>6</td>
<td>0.276</td>
<td>0.012</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>0.615**</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>0.397**</td>
<td>0.000</td>
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<tr>
<td></td>
<td>9</td>
<td>0.744**</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>0.393**</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Source: Questionnaire primary data (processed), August 2022

Based on the data from table 2 above, it shows that all question items for the attitude variable have a Pearson product moment correlation index value (r) which is greater than 0.3 except for the attitude question item 6 (with an r of 0.276). Attitude question items 6 were omitted from the test to ensure the validity of all attitude variable question items. The attitude variable question items have a Cronbach alpha coefficient of 0.664, which means that all question items for the attitude variable (S) are reliable for the next test.

Relationship Test Results

To determine whether this relationship test uses the Pearson Product Moment Correlation or Spearman Rank Correlation, a normality test is required:

Table 3. Normality Test for

<table>
<thead>
<tr>
<th>Variables</th>
<th>Kolmogorov Smirnov Sig</th>
<th>Shapiro Wilk Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>Attitude</td>
<td>0.000</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Source: Questionnaire primary data (processed), August 2022

Significant values in table 3, both Kolmogorov Smirnov and Shapiro Wilk columns reveal that all the variables tested are distributed abnormal, with a sig below 0.05. The results of this normality test suggest that the relationship test in this study uses the Spearman Rank Correlation.

Testing the relationship in this study using the Spearman Rank correlation coefficient by looking at the probability (sign) between the education level of parents with Knowledge (P) and Attitude (S). The following is a summary of the relationship test:

Table 4. Relationship Test

<table>
<thead>
<tr>
<th>Relationship of Parents' Education Level with</th>
<th>Spearman's rho</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Correlation Coefficient</td>
</tr>
<tr>
<td>Knowledge</td>
<td>0.384</td>
</tr>
<tr>
<td>Attitude</td>
<td>0.711</td>
</tr>
<tr>
<td>Relationship between Parent's Residence and</td>
<td>Correlation Coefficient</td>
</tr>
<tr>
<td>Knowledge</td>
<td>0.140</td>
</tr>
<tr>
<td>Attitude</td>
<td>-0.433</td>
</tr>
</tbody>
</table>

Source: Primary data questionnaire (processed), August 2022
Relationship between Parents’ Education Level and Knowledge

The correlation coefficient value between parents’ education level and knowledge in Table 4 is 0.384 with probability (sign) of 0.000. The probability value which is smaller than 0.01 indicates that there is a significant relationship between parents’ education level and knowledge, and the relationship between the two is positive with a correlation coefficient of 0.384. Alternative hypothesis H1 was accepted at 1% alpha level. Furthermore, this also means that if there is an increase in the education level of parents, then there is a tendency to increase knowledge and this relationship goes both ways.

Relationship between Parents’ Education Level and Attitude

The correlation coefficient value between parents’ education level and attitude in Table 4 is 0.711 with a probability (sign) of 0.000. The probability value which is smaller than 0.01 indicates that there is a significant relationship between parents’ education level and attitudes, and the relationship between the two is positive with a correlation coefficient of 0.711. The alternative hypothesis H2 was accepted at the 1% alpha level. Furthermore, this significant positive relationship also means that parents who live in group 1, or in this case live in Surabaya, have a higher attitude tendency and this relationship goes both ways.

Relationship between Parents’ Residence and Knowledge

The correlation coefficient value between parents’ residence and knowledge in Table 4 is 0.140 with a probability (sign) of 0.208. The probability value greater than 0.10 indicates that there is no significant relationship between the parents’ place of residence and knowledge. Alternative hypothesis H3 cannot be accepted at the 10% alpha level. Furthermore, this also means that wherever the parents live (be it in Batam or Surabaya), it has nothing to do with knowledge.

Relationship between Parent’s Residence and Attitude

The correlation coefficient value between parents’ residence and attitude in Table 4 is 0.433 with a probability (sign) of 0.000. The probability value which is smaller than 0.01 indicates that there is a significant relationship between the parents’ place of residence and attitudes, and the relationship between the two is negative. The alternative hypothesis H4 was accepted at the 1% alpha level. Furthermore, this significant negative relationship also means that parents who live in group 1, or in this case live in Surabaya, have a higher attitude tendency and this relationship goes both ways.

DISCUSSION

This study showed that the education level of parents increased as the children’s dental health. This is in line with research conducted by Ruslan (2016) who conducted research on parents of students with high school and undergraduate education, where the children most affected by dental caries were children whose parents had the last high school education as many as 43 people (90%). First, if we look at the level of education and economic level, based on the results of a field survey conducted by Rustiana et al, it is known that the education level of urban communities is relatively high when compared to coastal communities, namely the majority have a high school education level or bachelor degree. This is evidenced by the results of respondents from parents in urban areas, most of whom with a percentage of 75.6% have the latest undergraduate education level, while in coastal areas the majority have the last education level in elementary school with a percentage of 36.6%. This result is also supported by a number of previous studies such as in Afiati, et al (2017), Mayasari & Radianto (2020).

Furthermore, from the knowledge category, most of the parents of PG/TK Benih Kasih Surabaya with a percentage of 75.6%
already have good knowledge about children's dental and oral health, while parents of TK/PAUD Benih Prima Batam children who have good knowledge only amounted to 56.1%. There is a significant difference because most of the parents of the PG/TK Benih Kasih Surabaya have the highest level of education as undergraduates and the parents of the TK/PAUD Benih Prima Batam have the highest level of education in elementary school. This proves that the existence of an adequate level of education can be reflected in the knowledge that parents have. And finally, the category of parental attitudes about children's oral and dental health at PG/TK Benih Kasih Surabaya found that most of the respondents had a good attitude to support their children's dental and oral health properly. Meanwhile, most of the parents at Benih Prima Batam Kindergarten/PAUD are still at an adequate level of attitude in supporting their children's dental and oral health. This is influenced by the level of education and economic level of a person which will shape his attitude in doing something.

External factors that can affect parents' knowledge about children's dental and oral health can be seen from the repetition carried out by parents to children to support their child's dental and oral health. Parents need to know the dominant variables causing caries are the age of the child, the pH of the child's dental plaque, the frequency of consumption of cariogenic children, the weight or height index and family income. The repetition category can be shown from several questions, the first is a question to see whether parents have taught their children how to brush their teeth. Meanwhile, only 97.6% of parents in coastal areas answered that they had taught their children how to brush their teeth. This can prove that parents who put a good level of dental and oral health will do repetition to their children because of good knowledge and experience from repetition that is done regularly will help create a good perception. The second question by asking parents whether it is necessary to bring their children regularly for dental and oral examinations every 6 months, respondents from urban areas 90.2% answered that it was necessary to bring their children regularly, while respondents from coastal areas only 80.5% answered that they needed to bring their children to have their teeth checked regularly. Repetition by bringing children to check their teeth every 6 months is important so that not only parents pay more attention to the level of dental and oral health of their children, but children will also pay attention to their level of dental and oral health. From the two questions above, it can be seen that parents in urban areas have good external factors that can affect parents' knowledge about their children's dental and oral health. Most parents in urban areas with a percentage of 75.6% have good knowledge about children's dental and oral health, while parents in coastal areas who have good knowledge are only 56.1%. This proves that when parents have a good level of knowledge about children's dental and oral health, parents will teach children to brush their teeth from an early age and bring their children for regular dental check-ups. When viewed from the results of parent respondents in urban areas, 100% of parents answered that they had exposed their children to cleaning their teeth and mouth and 90.2% thought that it was important to have regular dental and oral examinations. One of the factors that influence this mindset comes from the knowledge that parents have which can affect parents' knowledge about children's dental and oral health. So we can know that the level of parental education is indeed related to knowledge and attitudes related to children's dental health. This is in line with the research conducted by Viana (2022) on 75 respondents at the Department of Pediatric Dentistry at Baiturrahmah Dental and Oral Hospital. The results of dental and oral complaints were 29 people (38.7%), 46 people (61.3%) no complaints. This means that many parents of children in the Department of Pediatric Dentistry, Baiturrahmah University Dental and Oral Hospital, maintain their dental and oral health so
that this behavior becomes a role model for their children to always maintain dental and oral health.\textsuperscript{25}

Based on this research, people who have a low level of education tend to have low knowledge. In the future, it is hoped that health workers and educational institutions will work hand in hand in helping parents of their students in order to improve the knowledge and attitudes of parents regardless of the level of education to support their child's dental and oral health, and as preventive dental health promotive agents can work together in holding Dental Health Education and establish a School Dental Health Unit in schools.

This study also found that there was no significant relationship between parents' residence and knowledge. This means that there is no relationship between parents' knowledge of children's dental health and where they live, whether they live on the coast of Batam or urban Surabaya. Parents with a younger age range will be more advanced in terms of knowledge because of the many available information facilities. In this study, most of the parents in urban and coastal areas had an age range of 25-34 years, so there was no significant relationship between residence and knowledge.

On the other hand, this study also showed that there was a significant relationship between parental residence and attitudes, and the relationship between the two is negative. This negative relationship indicates that parents who live in Surabaya have a tendency towards better dental health. Factors that can influence parents' attitudes about their children's dental and oral health are predisposing, enabling, and reinforcing factors. The predisposing factors are seen from the categories of knowledge, attitudes, education level, and economic level that underlie parents' attitudes towards their children's dental and oral health. As people who live in urban areas, most of the people's livelihood is as an employee or office worker.\textsuperscript{26}

This is not proven by the results of the respondents that the researchers got, with a percentage of 53.7% of parents in urban areas having jobs as housewives, this happens because in general with a percentage of 97.6% of respondents filled by women so that they do not become a it is surprising if the majority of the work owned is filled with housewives. Differences in education levels affect the movement of the economic level of each place, as we know most of the livelihoods of coastal communities are engaged in processing and trading marine products which are obtained.\textsuperscript{15}

This is not proven by the results of the respondents that the researchers got, with a percentage of 48.8% of parents in coastal areas also having jobs as housewives, this happens because in general with a percentage of 80.5% of respondents filled by women so they do not become a housewife. Furthermore, from the category of parents' attitudes about children's dental and oral health in urban areas, it was found that most of the respondents had good attitudes to support their children's dental and oral health properly. Meanwhile, most of the parents in coastal areas are still at an adequate level of attitude in supporting the dental and oral health of their children. This is influenced by the level of education and economic level of a person which will shape his attitude in doing something.

Based on this study, there was a significant relationship between the parents' place of residence and attitudes, and the relationship between the two was negative. Furthermore, this significant negative relationship also means that parents who live in Surabaya, have a higher attitude tendency and this relationship goes both ways.

This study highlights the importance of parents' level of education toward a knowledge and attitude toward children oral health. As only two cities are selected to be the representative of urban and coastal area, future studies could again explore the notion of environment or residence impact parental knowledge and attitude toward children oral health.
CONCLUSION

This study showed as the education level of parents increased as the children's dental health and attitudes. Parents who live in urban areas (Surabaya) have a higher attitude tendency and this relationship goes both ways. It is hoped that health workers and educational institutions work together to pay more attention to the dental and oral health of children aged 3-6 years by increasing parental knowledge by holding dental and oral health counseling so that they can emphasize good habits that parents can do at home and implemented in their children.

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REFERENCES


