DOI: 10.1590/1413-81232015207.04502014

Qualitative study on adolescents' reasons to non-adherence to dental treatment

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Abstract *The study aimed to reflect on adolescents' speeches regarding their justifications for non-adherence to dental treatment. This is a qualitative research derived from a quantitative research aimed at adolescents from 15 to 19 years of public schools belonging to the area of 34 Primary Health Units – Family Health, in Piracicaba, SP, in 2012. The adolescents were evaluated, diagnosed and referred for dental treatment. One year after this intervention and with non-adherence to treatment, we used a qualitative method to deeply understand this phenomenon. We conducted 25 interviews with a semi-structured script, divided into three blocks: adopted or did not adopt actions recommended; arguments justifying the non-adherence of recommended actions; dimensions related to oral health importance. We adopted the thematic analysis and non-adherence was related to some aspects and grouped in: no priority; priority and change of priority. We concluded that the main reasons for non-adherence are related to different priorities, and orthodontic brace was a potent stimulator of interest and establishment of priorities in oral health care among adolescents.*

Key words *Adolescent behavior, Qualitative research, Oral health, Patient compliance, Public health*

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Introduction

In the current literature, there is a consensus that adolescence is a period of risk exposure, internal and interpersonal conflicts, and several studies highlight the need to better understand their specificities, their paradigms[1]. Challenging the vulnerability, walking in groups, following fashions and worries regarding the body and appearance are adolescence characteristics. Thinking on adolescent health involves understanding the different ways of thinking and living adolescence[2,3].

Although the literature reveals a fertile scientific production on the "therapeutic adherence" concept, we can observe that among the ideas expressed by researchers in the field there are two main differences: focus on the patient and the search for external factors regarding the patient[4].

The World Health Organization Adherence Project (WHO), for example, defines as adherence to chronic treatments the definitions by Haynes[5] and Rand[6], who define adherence as a behavior of following a medical recommendation, or other health care professional. It also considers adherence in five dimensions: social and economic factors; staff/health care system; diseases characteristics; diseases therapies and patient-related factors[7]. We observed that only one factor relates directly to the patient, considered as one of adherence determinants. Studies on adherence have found that it is not enough to have a public health service available; further efforts are needed for it to be used and accessed[8,9].

Studies published in English explain the differentiation of the terms "adherence" and "compliance", the first term is related to the idea of free choice of individuals on adopting or not the recommendations made by health care professional, and the second term refers to the idea of the patient passive conduct, which can be translated as "obedience"[4].

In this study we adopted as "adherence" concept the decision of seeking a health service and following the recommended treatment. Attitudes opposed to this idea were considered "non-adherence". Therefore, the objective of this paper was to present and discuss the justifications for non-adherence to dental treatment in a group of adolescents diagnosed with the necessity to treat tooth cavity and periodontal disease, who were referred for the public health service.

Methodology

The article refers to the findings of a qualitative research derived from a cross-sectional observational analytical quantitative research aimed at adolescents, aged between 15 and 19 years, students from public schools, which belong to an area of 34 Primary Health Units – Family Health (PHU-FH) in the city of Piracicaba/SP. This study was approved by the Ethics Committee.

The sample size was calculated based on reports of tooth cavity in the Brazilian Southeast region, using the national epidemiological survey data, and contemplating the 34 areas of Primary Health Units – Family Health (PHU-FH) in the municipality. We admitted sampling error of 5%, DMF-T = 5.16 with SD = 4.54, sampling loss of 20% and a 95% confidence level, yielding a sample of 1,428 individuals from 15 to 19 years-old randomly selected.

Of these 1,428 adolescents initially selected, 256 did not show up on the exam day or did not want to participate. Thus, 221 subjects were evaluated in 34 PHU-FH and 951 in 21 public schools, totaling 1,172 adolescents examined. The exclusion criteria of the quantitative study were the presence of systemic diseases, communication difficulties or neuromotor problems and severe hypoplasia. Adolescents who did not agree to participate in the study and those absent the day of the examination were excluded from the sample.

The quantitative data collection (tooth cavity – Tooth with caries lesion, that is: demineralization of dental tissues, caused by bacteria action; DMFT – Index formulated by Klein and Palmer in 1937, used worldwide for diagnosis of dental conditions, when the measure unit is Decayed, Missing and Filled Tooth; periodontal disease – Infectious inflammatory disease which affects the supporting tissues of the teeth) was held in 2012, and following this action the adolescents in need of dental treatment received guidance on oral diseases, oral hygiene and personal care with health. In addition, these individuals were referred for dental services offered at the Primary Health Units – Family Health of that area.

A year after these procedures, the research team revisited the field to monitor the oral health indices of the population studied. At that time it was verified an adherence and non-adherence

Ciência & Saúde Coletiva, 20(7):2147-2156, 2015

scenario to dental treatment, and we were interested in knowing the factors which led these adolescents not to return. In an attempt to reach the information which led adolescents to two such different ways, the researchers decided to incorporate a qualitative arm to the initial study design.

We opted for the use of the qualitative method, as this enables us searching for understanding a particular phenomenon in depth, as the reality is built, based on the study context[10,11].

As for the interview technique, we used a semi-structured design originating from basic questions, supported by theories and hypotheses of interest for research, making room for new questions and generating new hypotheses while receiving the interviewees' answers[12].

In August 2013, it was performed the pre-test of the semi-structured script, which enabled improving this instrument through the sequence restructuring of questions and vocabulary used in their construction.

The interviews were structured in three blocks: 1) Adopted or did not adopt the actions recommended by the researchers; 2) Arguments justifying non-adherence of the actions recommended by the researchers; and 3) Dimensions related to the importance of oral health and regular dentist visits.

The qualitative data collection began in September 2013. The research team contacted the responsible for the schools and for the Primary Health Units – Family Health addressing the possibility of revisiting the group of adolescents. These institutions indicated the dates and more convenient times for the interviews, and the scheduling and the interviews were performed.

Two researchers conducted the transcripts immediately after each interview. The material transcribed from 25 interviews was pre-examined in December 2013, in order to detect saturation of answers. According to Fontanella and Magdaleno Júnior[13], saturation is the epistemological instrument which determines when the observations are not required, that is, when one realizes that no new element should expand the investigation or the investigated object. Thus, with the confirmation of answers saturation of the analyzed material, we ended up the interviews phase and immediately began the qualitative data analysis.

We adopted the thematic analysis proposed by Gomes[14], starting the work by exhaustive reading of the transcripts, in order to understand the data set and establish forms of classification. In this context we could: have a vision of the whole, identify initial themes and determine the theoretical concepts that would be used in the analysis. Then, we distributed extracts according to the original classification, and we also verified the sense cores contained in the analyzed material. Still at this stage, the extracts were grouped according to themes found and we prepared an essay by themes, in order to contemplate the meanings of the texts and their articulation with the theoretical concepts that guided this analysis. Finally, we proceeded to the composition of the material establishing dialogues between the themes, objectives and unique issues of this research.

Results and Discussion

The thematic analysis of 25 interviews allowed us to identify eight categories related to justifications of non-adherence to dental treatment among adolescents, which were: priority; neglect; lack of time; fear; difficult to access; orthodontic treatment; pain and social status. These categories were grouped setting three thematic bases: "no priority"; "priority" and "change of priority".

The sense of "no priority" was attributed to situations where dental treatment is not recognized as urgent, not important and does not stimulate the interviewees' interest. Thus, we observed that the survey participants considered other circumstances more important, which influenced the non-adherence decision of the interviewees, who had different justifications:

R: Did you go to the dentist after being referred for treatment in the Primary Health Units – Family Health?

I: No, I don't care much going to the dentist, I get lazy. It's like: I have tooth cavity but I don't go.

R: Do you think important to take care of the teeth?

I: It's no use talking about, ma'am, it goes in one ear and out of the other. The minute I leave here I already forget. I only go if I really want to. It depends on the will of the person and what you say doesn't help, one has to want to go...

(E13, male, 17, was referred for treatment of tooth cavities).

From the "no priority" perspective, it turns out that the need to attend the dental appointment did not happen because the interviewees did not attribute to it sense of urgency or importance. This finding raises a reflection: How could dental treatment become a priority in this context?.

It is known that transform health issue knowledge into healthy behaviors is a challeng-

ing task, especially in situations where there is a positive oral health diagnosis. In general, health protective behaviors are self-regulatory processes (self-regulation) determined and limited by beliefs, attitudes and knowledge; physical and social structures, skills or behaviors performance[15-17].

According to researches on health behavior, progress in prevention and protection area will be seen only when we understand how people organize their thoughts and act on their health[18-23]. According to Bandura[24], one of the factors that affect people's choices would be self efficacy perceived, that is, issues involving activities, behaviors, effort invested, the amount of time persisting before an obstacle and adverse experiences. Bandura[15], through the social cognitive theory, Fishbein and Ajzen's attitude-behavior models[25] and the Theory of Reasoned Action[26,27] defend the co-responsibility of individuals as an ally to achieve compliance of protective behaviors for oral health.

While environment, ability, previous experiences and behavior are essential components of cognitive theory, social self-efficacy cognitions are central to behavior explanation[15,24]. Self-efficacy cognitions are the expectations or individual beliefs about the ability to perform a behavior. A growing number of researches suggests that self-efficacy expectations are significantly and positively associated with initiation and maintenance (that is, long-term compliance) of health behaviors[15,17,28-32].

A major challenge is to know how to motivate and invest in the education process. According to Gagné and Briggs[33], motivation is widely recognized, as well as the need for prior and additional conditions of interest, and also keeping them when understanding self-care learning process occurs, establishing new conditions which influence them. DeBiase[34] defines motivation as internal and external forces that drive and encourage the satisfaction of a need. Thus, actions of education and promotion of oral health intended to encourage the care in this area must necessarily identify the sources of motivation and forms of personal satisfaction and, above all, strengthen the information, bringing the sedimentation of knowledge so that such actions effect is not lost in time[35,36].

The second thematic axis, "priority", focuses on the recognition of dental treatment importance, although the urgency and the interest in this type of health care are absent in the group of adolescents we interviewed:

R: Did you go to the dentist after being referred for treatment in the Primary Health Units – Family Health?

I: I didn't go because it didn't hurt. I think it's important, but it didn't hurt. I didn't think it was serious.

(E24, Female, 16, was referred for periodontal treatment).

Fear was also identified as a very influential feeling in non-adherence and the priority referred for dental treatment:

R: Did you go to the dentist after being referred for treatment in the Primary Health Units – Family Health?

I: I don't go to the dentist for fear that anesthesia will hurt.

R: Do you think important going to the dentist?

I: Yes, I do, but I'm afraid...

(E7, Female, 19, was referred for tooth cavity treatment).

When referring to "fear" as justification for preventing dental treatment, it is interesting and important to note that postponing going to the dentist for fear or pain, besides being harmful to health, establishes a situation which reinforces this belief, making it more difficult to be minimized. Also, in this case, where the diagnosed and treatment indication occurred, not going to the dentist probably should lead to a severe evolution of a simple oral problem. Over time there should probably be developments in the case and this condition should require a more specialized/complex treatment as well as invasive procedures and, hence, more probability to discomfort experiences, especially physical, as well as higher financial costs[37].

The literature reveals that the training of human resources in health, especially in odontology, rarely offers observational training or behavior management in behavioral sciences. Therefore, it is clear that the current education model emphasizes the biomedical vision, which focuses on cognitive and instrumental mastery. As a result of this training guidance, the dentist finds it difficult to identify, observe and experience reflective processes that foster behavior change and effectively reach health promotion[38,39]. "Change of priority" (the third thematic axis) was detected in cases of dental clinic emergency, and in situations perceived by adolescents as non-emergency medical treatment, although considered necessary due to social status and aesthetics. Thus, we verified that at certain times there are factors which affect the sense of priority, transforming it in need of treatment, leading the adolescent to seek private or public dental service. The extracts below illustrate the first part related to "change of priority" (medical and dental emergency):

R: Did you go to the dentist after being referred for treatment in the Primary Health Units – Family Health?

I: I went to the dentist because I was in pain. He gave me a medicine to take for 15 days and booked a return to 20 days, but I didn't go back because I felt no more pain and I was too scared. There's a hole in my tooth and it hurts, I chew only on one side, but it does not hurt if I don't chew. I think it's important to take care of the teeth.

(E14, Female, 17, was referred for tooth cavity treatment).

R: Did you go to the dentist after being referred for treatment in the Primary Health Units – Family Health?

I: No. I didn't even remember nor pay attention. I had a root canal done last month because it was hurting a lot... now I'm going to the tooth health insurance; the root canal was done by SUS (Unified Health System). It's important to treat the teeth. I went there because I was in pain.

(E21. Female, 16, was referred for tooth cavity treatment).

Pain, which leads the adolescent to search for dental treatment, was identified as the main justification. When pain is manifested, the degree of the disease is probably at an advanced stage, and this scenario, in most cases, requires a more complex treatment. Prevention and adolescents behavior change in relation to their own health care is a great challenge for the professionals in this area. It is noteworthy that from the time they received the diagnosis, guidelines and referral for dental treatment, those adolescents did not consider following the recommendations, since they did not consider their cases important. This scenario is, in the researchers' view, highly challenging and raises some questions: How to motivate and keep adolescents motivated to take care of their own health? How to make oral health a priority?

Bosi and Affonso[40] mentioned that awareness of oral health importance is not a simple process, since experiencing the disease is a major factor in forming the "preventive consciousness." These authors state that this awareness does not follow the transfer of knowledge from the dentist to the adolescent, but from the experience with health and the disease. In this sense, the exclusive supply of guidelines does not lead individuals to permanent posture of behavior change. However, another study shows that partnerships between educators and health care professionals, working in education and health promotion of adolescents, establish significant positive results regarding their oral health[41].

The following extract show some situations related to the second part of "change of priority" (not urgent medical treatment, although considered necessary due to social and aesthetic status):

R: Did you go to the dentist after being referred for treatment in the Primary Health Units – Family Health?

I: I had no reason, whatever.

R: Do you think important going to the dentist?

I: No, like... the important thing for me is crooked teeth, I need orthodontic braces.

(E15, male, 16, was referred for tooth cavity treatment).

R: Did you go to the dentist after being referred for treatment in the Primary Health Units – Family Health?

I: No, I forgot. I lost the paper. I want to wear orthodontic brace. I already did the procedures. I'm going to the dentist to treat my teeth before the orthodontic brace.

(E6, Female, 16, was referred for tooth cavity treatment).

In these and in other answers, we found that orthodontic brace is one of the fundamental reasons for interest and visit to the dental services as a priority. The findings show a strong relationship between the use of orthodontic brace and the personal satisfaction of two demands considered important by the interviewees group: the desire to have an accessory that is a social status (consumer demand) and the desire to be beautiful (aesthetic demand).

According to Lawler and Nixon[42], in adolescence, the appearance is of fundamental importance. In this research we verified that the desire to be accepted and to be part of a group appears to promote the interviewees to seek for dental service.

However, there is a contradiction, all interviewees were diagnosed with oral diseases (tooth cavity and periodontal problems), situations where orthodontic treatment is not indicated until the oral health is restored.

Studies show that among adolescents negligent behavior findings are not rare, related to health care. Adolescence is recognized as a period in which the risk of developing tooth cavity and other oral diseases is increased due to the poor biofilm control, the lower careful brushing and higher intake of products with sugar[43-45].

With respect to aesthetics, some authors state that cultural values linked to it and greater access to health information are most evident in social classes with greater purchasing power, which may explain the fact that adolescents from pri-

vate schools cite more often teeth and hair as very important[44-47].

In this study we found that although the adolescents of this study are from public school and live in areas of greater social vulnerability, they were concerned with aesthetics, similar to the studies cited. However, in this study, we found that there is a concern related to the "ownership" of an accessory that is a status reference and which reflects a consumption desire, as well as "be fashionable" and "look good".

This scenario reminds us of the Actor-Network theory, which, briefly, comprises the idea that actors constantly find themselves connected to a social network of tangible and intangible elements, that is, there are movements, actions, connections that are linking people, things and nature in temporary associations[48-51]. In this context, constructing meanings in consuming goods does not follow only the social relations at the institutional level, but also the relationships structure in which the individual is inserted. Thus, the logic of acquisition of goods has an individual dimension, which is made possible to those who consume to express their individuality, and the social dimension which is the expression of their identification with social groups[52].

In adolescence, individuals acquire new group references, suffering influences of consumer trends and behaviors. Thus, network movement becomes apparent on the findings of this study, as the idea of belonging and achieving beauty is provided by the use of orthodontic brace. From this perspective, we can state that the interest in dental treatment in the studied population is not related to health, but is related to other interests regarding adolescence, as well as to the context of life of these subjects. It is thought that the emergence of logic of priorities in the adolescents' answers can contribute to the improvement of action planning in oral health. In this sense, the effort to articulate the interests of the studied group with the provision of dental services could facilitate the access of adolescents to means of prevention, treatment and oral health maintenance offered in this context.

These ideas can be strengthened by published studies[53,54], whose reports state that it is essential to know the needs, psychosocial and contextual structure in which these adolescents are inserted, incorporating them into health care oral actions and facilitating the emergence of new ideas and actions that fit, appear and are developed in this reality.

Still regarding orthodontic brace, the analysis of the answers reveals surprising reasons for non-adherence to dental treatment: confusion between the concept of orthodontic dental visits (normally in private services) and the concept of dental visits for tooth cavity treatment and periodontal diseases to which adolescents were referred for.

The following extracts illustrate times when such confusion was detected:

R: Did you go to the dentist after being referred for treatment in the Primary Health Units – Family Health?

No. I already go to a dentist who monitors the braces. Since I was going to the dentist for the braces every month I thought I didn't need to go in another.

(E1, Female, 17, was referred for tooth cavity treatment).

R: Did you go to the dentist after being referred for treatment in the Primary Health Units – Family Health?

Why? I've been using orthodontic braces for three years and I'm going to the dentist every month. The orthodontic braces dentist said I don't need to treat the teeth.

(E18, Female, 16, was referred for tooth cavity treatment).

R: Did you go to the dentist after being referred for treatment in the Primary Health Units – Family Health?

I didn't go because I'm in an orthodontic treatment and I go to the dentist every month.

(E17, Female, 16, was referred for periodontal treatment).

R: Did you go to the dentist after being referred for treatment in the Primary Health Units – Family Health?

No, I did not... I wear orthodontic brace for 7 years. The orthodontic brace dentist said I needed to do the treatment, so I have to make an appointment.

(E4, male, 16, was referred for periodontal treatment).

By analyzing this type of answer, we observed that in the next interventions it will be necessary to clarify the differences between the dental appointment procedures they cited, in order to minimize the non-adherence to the prescribed treatment.

In addition to the aforementioned confusion, we should recognize the important influence the adolescents attributed to the orthodontist. We could also verify that the population studied, although within an area of vulnerability and social risk, has health insurance and private clinics, enabling the use of orthodontic brace as a desired

consumption. In a recent study, social media websites were investigated and it was found that adolescents exchange information on the use of orthodontic braces; it is probable that the feedback derived from these casual conversations influences these individuals attitude against orthodontics. The authors of the study reported that adolescents undergoing orthodontic treatments communicated by social media, expressed positive attitudes toward the treatment and that the possibility of choosing the orthodontic colored elastics was highly valued among them[55,56].

Considering that virtual conversations between adolescents motivate the search for orthodontic treatment; considering that the analysis of the data reveals that the notion of using orthodontic brace is not part of the logic of health and within the consumer logic; and also considering the recent national publicity that the "orthodontic braces as fashion accessories" had in an important television program in the country, it was detected that adolescents are having access to orthodontic braces without any technical control, turning this into another public health problem.

We emphasize that inserting orthodontists in specialty centers was regulated by the Ministry of Health, which started to finance, through the Ministerial Decree No. 718/SAS of December 20th 2010[57] new procedures, including orthodontic and orthopedic braces. It is thought that in this new context, having the orthodontist as a vector of health activities, using adolescents' interest in this specialty, making them aware of the commitment to their oral health, in the form of prevention and dental treatment, are pre-requirements for possible orthodontic treatments with proper supervision and indication; it would quite contribute to adherence to treatment and oral health, as this specialty is a motivator for adolescents, in a sense of caring for their teeth. Therefore, it is possible to recognize the probable power of proposals combined by education, awareness and self-care, in health as a whole and especially in oral health of adolescents who participated in this study.

As a suggestion, we thought that treatment adherence could be more successful when the approach, rather than from brushing techniques and oral hygiene, started with conversation with the orthodontist. The triggering question of the activity could have been: Who wants to wear orthodontic braces? With the interest stimulated in the group, the orthodontist would describe and explain all the prerequisites for orthodontic braces. In addition, the same professional would also report problems related to "orthodontic braces as fashion accessories" which are sold and installed by people without any training in dentistry, a fact that damages the oral and systemic health of the population.

Conclusion

We found that the main reasons for non-adherence to the proposed dental treatment are related to different logics of priorities of the group, that is, the need to devote attention to oral health, in the view of the interviewees, depends on what they consider urgent, important and interesting.

The use of orthodontic braces, although it is related to the need for consumption in this population, proved as potent stimulator of interest and established priorities in oral health care among adolescents. Thus, we propose that, when planning promotion and prevention strategies in oral health among this public, a dentist specialist in orthodontics be incorporated into the team.

We also suggest that actions should consider as a starting point the care required to individuals using these oral devices, and then developed towards the basic oral hygiene principles. At first this logic may seem controversial to dentists; however considering this study scenario, we ponder on this strategy as a promising possibility to minimize non-adherence studied here.

Contributors

FL Vazquez, KL Cortellazzi, JV Bulgareli, and LM Guerra participated in the conception, design, and data collection. FL Vazquez and CS Gonçalo participated in the article writing, ESP Tagliaferro, FL Mialhe and AC Pereira participated in the critical review.

Acknowledgments

The authors would like to thank the financial support of FAPESP (Foundation for Research Support of the State of São Paulo) and the school principals, teachers and all adolescents who contributed to the research.

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Article submitted 6/5/2014
Approved 17/3/2015
Final version submitted 19/3/2015