

1 **The impacts of Gianotti-Crosti syndrome (papular acrodermatitis of**
2 **childhood) on the quality of life of children**

3 **ABSTRACT**

4 Background: Gianotti-Crosti syndrome (GCS) is a self-remitting eruption related to
5 viral infections. Ribavirin has been reported to be effective in treating
6 severe GCS. Before clinical trials on antiviral agents, the magnitude of
7 GCS affecting the quality of life in children should be ascertained.

8 Aim: To investigate the impact of GCS on the QOL of children.

9 Methods: Our setting was a teaching clinic. We validly translated the Children
10 Dermatology Life Quality Index into Chinese. We recruited all
11 children aged five to 16 years diagnosed with GCS over two years. For
12 each child with GCS, we recruited the next age-and-sex pair-matched
13 child consulting us for atopic dermatitis (AD), and the next age-and-
14 sex pair-matched child brought to consult us for problems unrelated to
15 the skin as controls. All study and control subjects completed the
16 CDLQI.

17 Results: 23 children were GCS and 46 children as controls were recruited. The
18 impacts of GCS on children were significantly higher than children
19 brought to consult us for problems unrelated to the skin ($P < 0.05$),
20 with the parameters *symptoms and feelings, leisure, school or holidays*,
21 and *treatment* mostly affected. However, the scores were low. Four
22 (17%) study subjects and none (0%) in the second control had total

23 CDLQI higher than 30%. The difference is insignificant (RR:
24 inapplicable; $P = 0.11$).

25 Impacts of AD on children were significantly higher than such for GCS
26 ($P < 0.001$). Twelve (52%) children with AD and four (17%) children
27 with GCS had total scores higher than 30% (RR: 3.00, 95% CI: 1.13 –
28 7.94; $P < 0.05$).

29 When compared to a similar study on children with pityriasis rosea, the
30 impacts of GCS were very similar to those of pityriasis rosea.

31 Conclusion: GCS casts relatively low impacts on the QOL of children. These
32 impacts were much lower than such of AD.

33

34 **BACKGROUND**

35 Gianotti-Crosti syndrome (GCS, also known as *papular acrodermatitis of childhood*)
36 is a skin eruption previously reported to be related to hepatitis B virus infection [1,2],
37 but is now closely related to Epstein Barr virus [3,4] and other viral infections [5,6].
38 Applying polymerase chain reaction to detect human herpesvirus 6 and 7 DNA and
39 reverse transcriptase polymerase chain reaction to detect human herpesvirus 6 U91
40 messenger-RNA transcripts in the plasma and peripheral blood mononuclear cells of
41 children with GCS, we have reported that GCS in our locality might be associated
42 with primary infection of human herpesvirus 6B [7].

43 Many clinical trials have been reported over the past decade on the active treatment of
 44 exanthems which might be caused by viruses, such as the use of acyclovir on
 45 pityriasis rosea (PR) [8,9]. In one of these studies [10], children with PR were
 46 recruited. However, we have found that PR does not exert significant impact on the
 47 quality of life (QOL) of most children [11]. For these children, the use of active
 48 antiviral treatments is still controversial.

49 To our best knowledge, no study has been reported on the impact of GCS on the QOL
 50 of children. ~~In the era of growing adoption of antiviral therapies,~~ We believe that
 51 such a study is necessary so that further interventional studies, ~~if any,~~ might have a
 52 baseline outcome measure to refer to.

53 **AIM**

54 Our aim is to investigate the impact of GCS on the QOL of children.

55 **METHODS**

56 **Children Dermatology Life Quality Index**

57 The Children Dermatology Life Quality Index (CDLQI) [12] is a vigorously validated
 58 tool to assess impacts of skin diseases on QOL of children. It has been applied to
 59 children with a wide range of skin diseases internationally [13-16].

60 It consists of ten questions, and is designed for use in children aged five to 16 years.
 61 ~~It is self explanatory, and can be simply handed to the child to fill in with some help~~
 62 ~~from the parent or guardian.~~ It is categorised in six parameters: *symptoms and*
 63 *feelings, leisure, school or holidays, personal relationships, sleep, and treatment.*

64 Translation

65 We obtained permission from the copyright holders of CDLQI to translate this index
 66 into Chinese, and to be applied in this study. Two professional translators translated
 67 the English version of CDLQI (E_1) into Chinese independently (C_1 and C_2). They
 68 then compared C_1 and C_2 , made adjustments, and agreed on the third version (C_3).
 69 Two other translators then back-translated C_3 into English (E_2 and E_3). They
 70 disclosed their translation, made adjustments, and agreed on the fourth version (E_4).
 71 All translators then compared E_1 and E_4 , made final adjustments, and produced C_4
 72 [17].

73 Establishing the validity and reliability

74 We requested 30 children with and 30 children without skin diseases to complete C_4 ,
 75 and assessed the severities of the skin problems with a visual analogue scale. Several
 76 children attended again seven days later for medical care. We requested them to
 77 complete C_4 again. We investigated the correlations by Spearman rank order
 78 coefficient (r_s). We assessed item scale correlations, and evaluate internal
 79 consistency by Cronbach's α . All P values were two tailed [17].

80 Recruitment

81 Our setting is a teaching clinic attached to a university teaching hospital. The clinic
 82 service is run by a clinician with training and qualifications in paediatrics and
 83 dermatology. Over a two-year period (24 calendar months), we requested each child
 84 aged five to 16 years who was brought to consult us with the final diagnosis being
 85 GCS to participate in our study. For each study subject, we requested the next child
 86 of the same sex and similar age (within one year) who was brought to consult us for
 87 atopic dermatitis (AD) as the first group of controls. We also requested the next
 88 child of the same sex and similar age (within one year) who consulted us for diseases
 89 unrelated to the skin as the second group of controls. Our diagnoses of GCS was

90 made according to a set of validated diagnostic criteria [18,19]. We diagnosed AD
91 according to the criteria of the United Kingdom Working Party [20-22].

92 We allowed unlimited time for the children to complete the CDLQI. The parents
93 could read the questions aloud if such was necessary.

94 RESULTS

95 Establishing validity and reliability

96 The 60 children completed C₄ with ease. All items were found to be unambiguous
97 and relevant to our local context. The scores were positively correlated with
98 physician-rated disease severities. The results for C₄ and E₁ were very similar for
99 similar diseases. C₄ is therefore valid.

100 Nine children with skin problems and seven with no skin problem attended us again
101 seven days later, and were requested to complete C₄ again. Test-retest correlation was
102 strong ($\gamma_s = 0.958$; P less than 0.01). The means of mean of the differences between
103 the test-retest pairs was 0.69 (95% CI: 0.26—1.11). The standard deviations of the
104 differences were substantially less than such of the measurements. Cronbach's α was
105 0.83 for all the test parameters. C₄ is therefore reliable, and becomes Chinese CDLQI.

106 Patient-control study

107 During the two-year period, we diagnosed a total of 23 children aged five to 16 years
108 with GCS. All had parental agreement to participate. The response rate was thus
109 100%. All children with GCS completed the CDLQI satisfactorily. The completion
110 rate was thus 100%.

111 Out of the 23 children, 15 were males and eight were females. They aged from five to
 112 14 (mean: 7.8 years). The two control groups were sex-matched. The first group of
 113 controls with AD aged six to 16 years (mean: 8.2 years). The second group of
 114 controls consulting us for problems unrelated to the skin aged seven to 14 years (mean:
 115 7.2 years).

116 The outcomes for CDLQI are depicted in Table 1. ~~It should be noted that there were~~
 117 ~~patients with GCS below the age of five and above the age of 16, who were not~~
 118 ~~recruited in this study.~~ The total CDLQI scores of children with GCS were
 119 significantly higher than such of controls not consulting us for skin diseases (P less
 120 than 0.05). For the individual parameters, the scores of children with GCS were
 121 significantly higher than such of controls for the parameters *symptoms and feelings*,
 122 *leisure, school or holidays*, and *treatment*. However, the total CDLQI score for
 123 children with GCS was 4.91, which was 16.4% out of the full score of 30 only.

124 The highest parameter affected was *symptoms and feeling* (39.8%). ~~The symptom~~
 125 ~~was mainly pruritus. Lesions of GCS could lead to impetiginisation, thus causing~~
 126 ~~pain.~~ The second top parameter affected was *leisure* (16.9%). This parameters were
 127 covered by three questions, regarding *swimming or sports, going out and playing*, and
 128 *choice of clothes*. As the lesions in GCS are prominently affecting the face and the
 129 distal aspect of the limbs ~~(GCS is an *acro*-dermatitis from its terminology)~~, it is
 130 expected that the children would not be allowed to attend these activities.

131 Two other parameters contended to be the third highest parameters – *school or*
 132 *holidays*, and *sleep*, at 8.7% for both. *School or holidays* covers either *schoolwork* or
 133 *enjoyment in holiday* over the previous week. *Sleep* was covered by one question
 134 directly asking for whether sleep was affected. Having such subacute and pruritic
 135 rash, the children were actually very adjustable with less than 10% of the top scores
 136 for these parameters.

Four (17%) children with GCS and none (0%) in the second control group had total CDLQI higher than 30%. The difference is insignificant (RR: inapplicable; $P = 0.11$).

The impacts of AD on children were significantly higher than such for GCS (P less than 0.001). ~~AD also exerted significantly more impacts than GCS did on all parameters other than leisure. AD affected the children significantly for all the parameters when compared to children not consulting for skin diseases.~~ 12 (52%) children with AD had total scores of CDLQI more than 30%. Such was significantly more than four (17%) children with GCS with total score over 30% (RR: 3.00, 95% CI: 1.13 – 7.94; P less than 0.05), and also significantly more than no (0%) child consulting us not for skin problems (RR: inapplicable; P less than 0.0001).

~~As the clinic was served by a clinician with training and qualifications in paediatrics and dermatology, the profiles for children with AD were expected to be more severe than for children consulting other family physicians. This was reflected by almost half of the total scores at 44.6% for the first group of controls consulting us for AD.~~

Table 2 shows the results of this study as compared to results of a previous study on ten children with PR [11]. Both groups demonstrated no significant difference in total scores and in scores for all the parameters. The scores for children with GCS were insignificantly higher than such for children with PR, particularly for the parameter of *symptoms and feelings*. This may be related to pruritus being commoner and more severe for children with GCS than those for children with PR, which was substantiated by clinical studies in these paraviral exanthems [7,23-25].

DISCUSSION

Having reported on the impact of skin diseases including AD [11,26], PR [11,27], and juvenile plantar dermatosis [13] on QOL of children, we have been asked whether

161 chronic skin diseases like AD and subacute diseases like GCS and PR could be
 162 compared with the same tool. All 10 questions in CDLQI endorse the terms *over the*
 163 *last week*. For PR and juvenile plantar dermatosis, all children reported by us had
 164 acute phases of the skin disease lasting for at least two weeks.

165 To our best knowledge, the shortest duration of the active phase in children with GCS
 166 reported was five days [28]. This duration is exceptional. Most children with GCS
 167 have at least two weeks of acute phases. The CDLQI was designed to assess the
 168 impacts over one week, and we have confirmed with the copyright holders of CDLQI
 169 (Finlay A, personal communication) that this index is appropriate to be applied to
 170 children with subacute dermatoses like PR and GCS.

171 The duration of any skin disease is a vital element for children. However, this is
 172 already known, and is not meant to be investigated by CDQLI. Running a risk of
 173 over-simplification, we might consider that the total impact of a dermatosis to a child
 174 could be expressed as the multiplication of scores over the last week and the total
 175 number of weeks of disease duration. In this context, AD would be exerting a large
 176 impact on the QOL of children, with an impact score of 44.6% multiplied by the
 177 duration of disease in terms of years, and for some children and adults, decades.

178 In stark comparison, the impact of GCS on the QOL of children could be reasoned as
 179 16.4% multiplied by the usual duration of GCS, such being two to six weeks [29]. If
 180 this is the case, the benefit of any active intervention for this paraviral exanthem
 181 might not be significant for most children with GCS.

182 For a six-year-old girl with four-month duration of GCS exemplified as generalised
 183 and intensely pruritic rash and generalised lymphadenitis, oral ribavirin 300mg daily
 184 for five days was prescribed. The symptoms were ablated promptly, and the disease

185 was brought into remission [30]. For this child, the anticipated benefit: adverse drug
186 effects ratio was high.

187 Our findings indicate that GCS exerts little impact to the QOL of most children. We
188 thus believe that symptomatic relief might be adequate for most children with GCS,
189 and that antiviral agents might not be necessary or indeed indicated for this self-
190 remitting dermatosis.

191 An analogy might be primary infection by another herpesvirus—chickenpox.
192 Antiviral agents are not being recommended as routine treatment for all children with
193 chickenpox [31], although the load of complications of chickenpox is likely to be
194 considerably heavier than such for GCS [32].

195 Another issue is clinician-rated and patient-rated outcome measures in clinical studies.
196 For adults with PR, we have recommended that patient-oriented outcomes should be
197 incorporated as primary outcomes for clinical trials [30]. We hope that patient-
198 assessed outcomes could be incorporated as outcome measures in clinical trials for
199 GCS in the future.

200 Lastly, and most importantly, the author would like to emphasise that the impacts of
201 disease entities on the QOL of patients is not the most significant agenda in deciding
202 whether a drug (such an antiviral agent) is to be prescribed to a patient (such as a
203 child with GCS). There are many more significant parameters to consider relating to
204 the disease, the patient, and the drug.

205 For the disease, extensiveness of the rash, severity of the clinical manifestations, and
206 the probability of short-term or long-term complications would be significant factors.
207 For the patient, symptoms of the rash, stigmatisation of having a skin disease, the

208 threshold to consult medical practitioners, the educational levels of the patients or
 209 their parents, and the culture for take medication for self-remitting rash can be of
 210 more significance than QOL. For the drug, the efficacy, adverse reactions, and the
 211 cost are significant considerations.

212 We recommend investigators performing clinical trials to incorporate patient-assessed
 213 parameters as one of the outcome measures. However, the impacts of the disease on
 214 the QOL of patients is only one of the methods to measure patient-assessed outcomes.
 215 Other factors related to the disease, the patient, and the drug could be of higher
 216 significance than scores on a QOL questionnaire.

217 CONCLUSION

218 GCS casts relatively low impacts on the QOL of children. These impacts were much
 219 lower than impacts exerted by AD.

220 REFERENCES

- 221 1. Gianotti F. Infantile papular acrodermatitis. Acrodermatitis papulosa and the
 222 infantile papulovesicular acrolocalized syndrome. Hautarzt. 1976;27(10):467-72.
- 223 2. Gianotti F. Papular acrodermatitis of childhood and other papulo-vesicular acro-
 224 located syndromes. Br J Dermatol. 1979;100(1):49-59.
- 225 3. Konno M. An association between hepatitis-B antigen-negative infantile papular
 226 acrodermatitis and Epstein-Barr virus infection. Hokkaido Igaku. Zasshi.
 227 1989;64(2),125-38.
- 228 4. Labbé A, Peyrot J. Gianotti-Crosti syndrome and Epstein-Barr virus infection. J
 229 Pediatr. 1983;102(6):1013-4.

- 230 5. Taïeb A, Plantin P, Du Pasquier P, Guillet G, Maleville J. Gianotti-Crosti
231 syndrome – a study of 26 cases. *Br J Dermatol.* 1986;115(1):49-59.
- 232 6. Pouillaude JM, Moulin G, Morlat C, François R. Gianotti-Crosti's infantile
233 papular acrodermatitis. Nosological relationship with viral hepatitis. A fatal
234 outcome. *Pediatric.* 1975;30(4):351-60.
- 235 7. Chuh AA, Chan HH, Chiu SS, Ng HY, Peiris JS. A prospective case control
236 study of the association of Gianotti-Crosti syndrome with human herpesvirus 6
237 and human herpesvirus 7 infections. *Pediatr Dermatol.* 2002;19(6):492-7.
- 238 8. Drago F, Vecchio F, Rebora A. Use of high-dose acyclovir in pityriasis rosea. *J*
239 *Am Acad Dermatol.* 2006;54(1):82-5.
- 240 9. Rassai S, Feily A, Sina N, Abtahian S. Low dose of acyclovir may be an
241 effective treatment against pityriasis rosea: a random investigator-blind clinical
242 trial on 64 patients. *J Eur Acad Dermatol Venereol.* 2011;25(1):24-6. doi:
243 10.1111/j.1468-3083.2010.03676.x.
- 244 10. Ganguly S. A randomized, double-blind, placebo-controlled study of efficacy of
245 oral acyclovir in the treatment of pityriasis rosea. *J Clin Diagn Res.*
246 2014;8(5):YC01-4. doi: 10.7860/JCDR/2014/8140.4360.
- 247 11. Chuh AAT. Quality of life in children with pityriasis rosea – a prospective case
248 control study. *Pediatr Dermatol.* 2003;20(6):474-8.
- 249 12. Lewis-Jones MS, Finlay AY. The Children's Dermatology Life Quality Index
250 (CDLQI): initial validation and practical use. *Br J Dermatol.* 1995;132(6):942-9.
- 251 13. Chuh AAT. Quality of life in children with juvenile plantar dermatosis in
252 primary care settings – a prospective case-control study. Sixth Australian
253 Conference on Quality of Life. November 2004, Melbourne.
- 254 14. Wisuthsarewong W, Nitiyarom R, Ngamcherdtrakul P. The validity and
255 reliability of the Thai version of Children's Dermatology Life Quality Index
256 (CDLQI). *J Med Assoc Thai.* 2015;98(10):968-73.

- 257 15. Chernyshov PV, Ho RC, Monti F, Jirakova A, Velitchko SS, Hercogova J et al.
 258 An international multi-center study on self-assessed and family quality of life in
 259 children with atopic dermatitis. *Acta Dermatovenerol Croat.* 2015;23(4):247-53.
- 260 16. Blome C, Radtke MA, Eissing L, Augustin M. Quality of life in patients with
 261 atopic dermatitis: disease burden, measurement, and treatment benefit. *Am J*
 262 *Clin Dermatol.* 2016 (in press).
- 263 17. Chuh AAT. Validation of a Cantonese version of the Children Dermatology Life
 264 Quality Index. *Pediatr Dermatol.* 2003;20(6):479-81.
- 265 18. Chuh AAT. Diagnostic criteria for Gianotti-Crosti syndrome – a prospective
 266 case control study for validity assessment. *Cutis.* 2001;68(3):207-13.
- 267 19. Chuh A, Lee A, Zawar V. The diagnostic criteria of Gianotti-Crosti syndrome –
 268 are they applicable to children in India? *Pediatr Dermatol* 2004; 21(5): 542-7.
- 269 20. Williams HC, Burney PG, Hay RJ, Archer CB, Shipley MJ, Hunter JJ et al. The
 270 U.K. Working Party's Diagnostic Criteria for Atopic Dermatitis. I. Derivation
 271 of a minimum set of discriminators for atopic dermatitis. *Br J Dermatol.*
 272 1994;131(3): 383-96.
- 273 21. Williams HC, Burney PG, Strachan D, Hay RJ. The U.K. Working Party's
 274 Diagnostic Criteria for Atopic Dermatitis. II. Observer variation of clinical
 275 diagnosis and signs of atopic dermatitis. *Br J Dermatol.* 1994;131(3):397-405.
- 276 22. Williams HC, Burney PG, Pembroke AC, Hay RJ. The U.K. Working Party's
 277 Diagnostic Criteria for Atopic Dermatitis. III. Independent hospital validation.
 278 *Br J Dermatol.* 1994;131(3):406-16.
- 279 23. Chuh A, Zawar V, Sciallis G, Law M. Gianotti-Crosti syndrome, pityriasis
 280 rosea, asymmetrical periflexural exanthem, unilateral medi thoracic exanthem,
 281 eruptive pseudoangiomatosis, and papular-purpuric gloves and socks
 282 syndrome – succinct reviews and arguments for a diagnostic criteria. *Infect Dis*
 283 *Rep.* 2012;4(1):38-48.

- 284 24. Drago F, Ciccarese G, Rebora A, Parodi A. Relapsing pityriasis rosea.
285 Dermatology. 2014;229(4):316-8. doi: 10.1159/000363568.
- 286 25. Drago F, Ciccarese G, Broccolo F, Cozzani E, Parodi A. Pityriasis rosea in
287 children: clinical features and laboratory investigations. Dermatology.
288 2015;231(1): 9-14. doi: 10.1159/000381285.
- 289 26. Hon KLE, Leung TF, Wong KY, Chow CM, Chuh A, Ng PC. Does age or
290 gender influence quality of life in children with atopic dermatitis? Clin Exp
291 Dermatol. 2008;33(6):705-9. doi: 10.1111/j.1365-2230.2008.02853.x.
- 292 27. Chuh AAT, Chan HHL. The effect on quality of life in patients with pityriasis
293 rosea – is it associated with rash severity? Int J Dermatol. 2005(5);44:372-7.
- 294 28. Chuh AAT. Gianotti-Crosti syndrome – the extremes in rash duration. Int
295 Pediatr. 2002;17(1):45-8.
- 296 29. Zawar V, Chuh A. The epidemiology, aetiology, and Chuh and Zawar's
297 diagnostic criteria of Gianotti-Crosti syndrome. Expert Rev Dermatol.
298 2013;8(1):57-64.
- 299 30. Zawar V, Chuh A. Efficacy of ribavirin in a case of long lasting and disabling
300 Gianotti-Crosti syndrome. J Dermatol Case Rep. 2009;2(4):63-6. doi:
301 10.3315/jder.2008.1022.
- 302 31. Centers for Disease Control and Prevention. Chickenpox (Varicella). Available
303 at: http://www.cdc.gov/chickenpox/hcp/persons_risk.html#acyclovir, accessed
304 on 17 February 2016.
- 305 32. Chuh AAT. Pediatric viral exanthems. *Yearbook of Dermatology and*
306 *Dermatologic Surgery* 2005, Mosby, Elsevier, US (ISBN: 0 323 02105 0): 16
307 43
- 308 30. Chuh A, Dofitas B, Comisel G, Reveiz L, Sharma V, Garner SE et al.
309 Interventions for pityriasis rosea. Cochrane Database Syst Rev.
310 2007;2:CD005068.

311 **Table legends**

312	Table 1	Scores of the Children Dermatology Life Quality Index for children
313		with Gianotti-Crosti syndrome, and for two control groups (children
314		brought to consult us with atopic dermatitis and children brought to
315		consult us for conditions unrelated to the skin).
316	Table 2	Comparison of the scores of Children Dermatology Life Quality Index
317		for children with Gianotti-Crosti syndrome and children with pityriasis
318		rosea [11].

Table 1

Groups	Number of children	Total CDLQI [#] scores*	CDLQI for symptoms and feelings [†]	CDLQI for leisure [†]	CDLQI for school or holidays [†]	CDLQI for personal relationships [†]	CDLQI for sleep [†]	CDLQI for treatment [†]
Children with final diagnoses being Gianotti-Crosti syndrome	23	4.91 (16.4%)	2.39 (39.8%)	1.52 (16.9%)	0.26 (8.7%)	0.26 (4.3%)	0.26 (8.7%)	0.22 (7.3%)
Children brought to consult us for atopic dermatitis	23	13.39 (44.6%) [‡]	4.34 (72.3%) [‡]	2.04 (22.7%)	2.30 (76.7%) [‡]	1.65 (27.5%) [‡]	1.57 (52.0%) [‡]	1.48 (49.3%) [‡]
Children brought to consult us for conditions unrelated to the skin	23	0.52 (1.7%) [§]	0.26 (4.3%) [§]	0.09 (1.0%) [§]	0.04 (1.3%) [§]	0.13 (2.2%)	0.00 (0.0%)	0.00 (0.0%) [§]

[#] Children Dermatology Life Quality Index

^{*} CDLQI Total CDLQI % score = Total CDLQI score / 30 X 100%.

[†] As different parameters were assessed by different number of questions, the following adjustments were made in calculating the % scores:

% score for *symptoms and feelings* and *personal relationships* = Score / 6 X 100%.

% score for *leisure* = Score / 9 X 100%

% score for *school or holidays*, *sleep*, and *treatment* = Score / 3 X 100%.

[‡] Significantly higher than scores for Gianotti-Crosti syndrome, with two-tailed *P*-value lower than 0.05

[§] Significantly lower than scores for Gianotti-Crosti syndrome, with two-tailed *P*-value lower than 0.05

328 Table 2

Groups	Number of children	Total CDLQI scores	CDLQI for symptoms and feelings	CDLQI for leisure	CDLQI for school or holidays	CDLQI for personal relationships	CDLQI for sleep	CDLQI for treatment
Children with final diagnoses being Gianotti-Crosti syndrome*	23	4.91 (16.4%)	2.39 (39.8%)	1.52 (16.9%)	0.26 (8.7%)	0.26 (4.3%)	0.26 (8.7%)	0.22 (7.3%)
Children with final diagnoses being pityriasis rosea*	10	3.50 (11.7%)	1.40 (23.3%)	1.00 (11.1%)	0.00 (0.0%)	0.10 (1.7%)	0.50 (16.7%)	0.50 (16.7%)

329 * No significant difference was found for the total scores and scores for individual parameters for children of both groups

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331