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Quality of life, psychosocial difficulties and bullying in paediatric patients with alopecia areata: a European cross-sectional study

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Abstract

Background Alopecia areata (AA) is a chronic immune-mediated condition leading to nonscarring hair loss. Its visible nature often leads to stigmatization and bullying, which can negatively affect the mental health and quality of life (QoL) of adolescents.

Objectives To investigate the experiences of bullying, psychosocial challenges and QoL in adolescents with AA.

Methods This cross-sectional study included 417 participants aged between 10 and 17 years, with 156 adolescents diagnosed with AA from 6 European countries and 261 healthy German controls. Data collection involved validated questionnaires. These included the Revised Olweus Bully/Victim Questionnaire for bullying, the Strengths and Difficulties Questionnaire for psychosocial difficulties, and the Pediatric Quality of Life Inventory for QoL. Clinical data, including AA severity score, were also recorded. Statistical analyses employed parametric and nonparametric methods, including multivariate analysis of variance, Mann–Whitney *U*-tests, *t*-tests and correlation analyses.

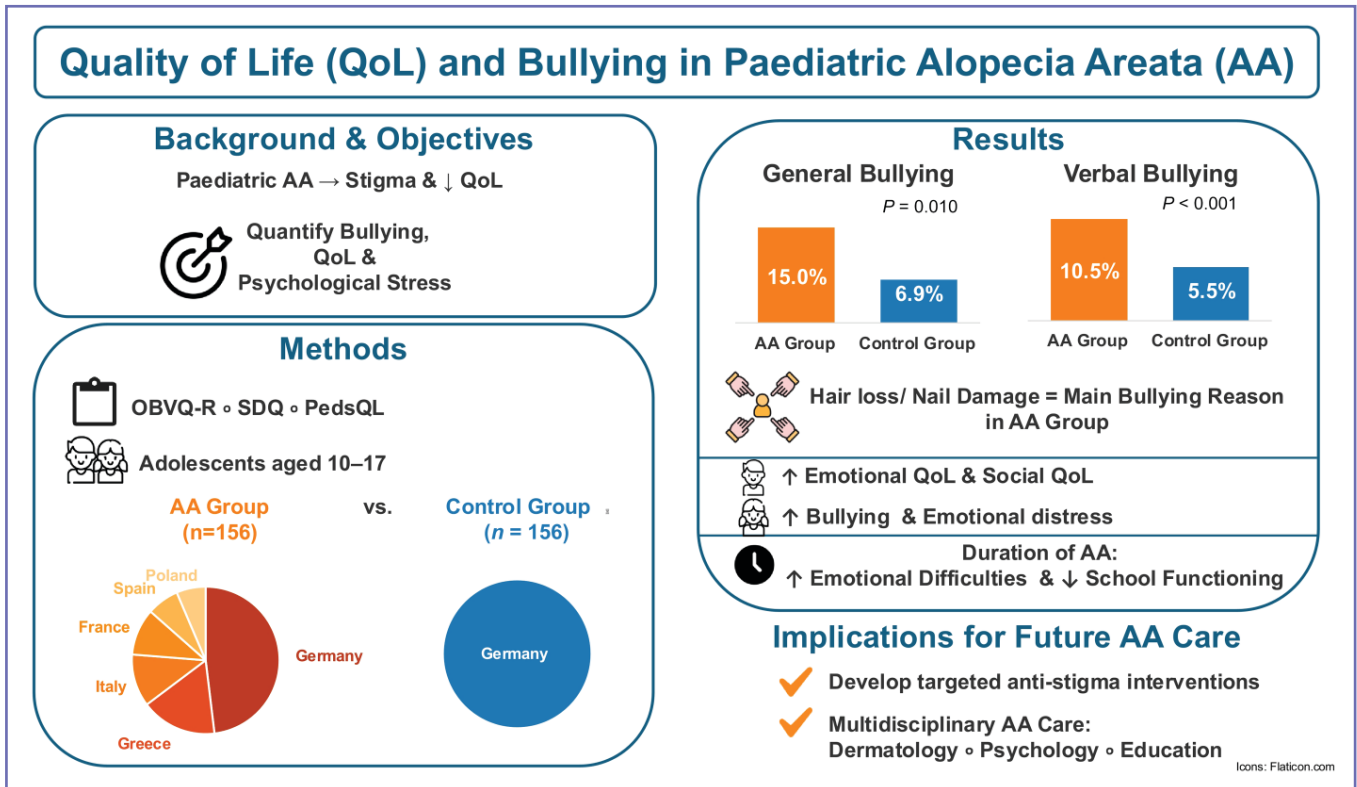
Results Adolescents with AA reported significantly higher rates of general and verbal bullying, with hair loss and nail damage commonly identified as reasons for bullying. Girls experienced more emotional distress and bullying, while boys reported better emotional and social QoL. Physical functioning (i.e. limitations in physical activity, pain or low energy) was significantly lower in the AA group, although overall QoL differences were low. Longer disease duration was associated with greater emotional difficulties and reduced school functioning. No association was found with the age of the participant or the severity of the disease.

Conclusions Adolescents with AA often face significant challenges, including higher rates of bullying and emotional struggles compared with healthy controls. Developing targeted interventions to combat stigma and support mental and emotional wellbeing of paediatric patients with AA, in addition to a collaborative effort involving dermatologists, psychologists and educators could possibly make a meaningful difference in improving the QoL for these young individuals.

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Graphical Abstract

**Lay summary**

Alopecia areata (AA) is a disease characterized by hair loss. It affects people of all ages worldwide. AA occurs when the immune system attacks hair follicles. It can range from small patches to total hair loss on the scalp, the face and the entire body. The visible nature of AA has been found to have a significant impact on young people's psychological wellbeing. In some cases, AA has been associated with bullying by peers.

In this study, we looked at how adolescents with AA experience bullying, mental health challenges and changes in their quality of life (QoL). We carried out this research across several European countries. These included France, Germany, Greece, Italy, Poland and Spain. Our study involved 156 adolescents who had AA, and we compared them with 261 adolescents without AA. We used surveys to measure levels of bullying, mental health and QoL. Details about each participant's medical condition (e.g. AA severity) were also collected. We found that adolescents with AA experienced much higher rates of bullying compared with those without AA. Girls with AA appeared to face more emotional struggles and bullying than boys with AA. Boys reported better emotional and social wellbeing. We also found that AA affected physical functioning of adolescents with AA more strongly compared with the control group. Longer-lasting AA was associated with greater emotional challenges and difficulties in school.

Our study results highlight the importance of emotional support for adolescents with AA. Teamwork between dermatologists, psychologists and teachers offers a promising way forward. Their efforts could improve the QoL and wellbeing of adolescents with AA.

What is already known about this topic?

- Alopecia areata (AA) is a chronic autoimmune disease that leads to hair loss, which can range from small patches to complete loss of the scalp hair and/or body hair.
- Adolescents with AA often experience stigmatization and psychosocial challenges that can lead to reduced quality of life (QoL).
- Just a few studies addressed QoL and bullying in this age group, and their limited sample sizes have restricted broader applicability.

What does this study add?

- This study is the first to comprehensively examine bullying, psychosocial difficulties and QoL in paediatric patients with AA, using a robust sample size.
- Participants with AA reported higher bullying rates, with hair loss and nail damage as key triggers.
- Girls experienced more distress and bullying, while boys reported better psychosocial QoL; longer disease duration was linked to greater emotional difficulties and reduced school functioning.

What are the clinical implications of this work?

- These findings emphasize the need for interdisciplinary care involving dermatologists, psychologists, social care providers and teachers to address the possible psychological implications of adolescents affected with AA.
- Antibullying programmes and public education are essential to reduce stigma and improve social awareness and, consequently, QoL in paediatric patients with AA.

Alopecia areata (AA) is a chronic, immune-mediated disease causing nonscarring hair loss.¹ It manifests in various forms, from small hairless patches in AA circumscripta to complete scalp hair loss in alopecia totalis or body hair loss in alopecia universalis in addition to a rare diffuse form.¹ Children and adolescents show a significantly higher prevalence of AA (1.83%) compared with adults (1.64%).² Moreover, 40% of all patients with AA experience their first manifestation before the age of 20 years.¹

Bullying involves repeated negative behaviour with intentional harm against a person who cannot defend himself/herself easily.³ Owing to the obvious visibility, skin conditions such as AA are often associated with stigmatization and bullying.^{4–6} This can have psychosocial implications, particularly in children and adolescents,^{7–10} including reduced self-esteem, dissatisfaction with their own body image and increased self-consciousness in social situations. These effects of bullying can increase the risk of psychological disorders^{7,11,12} and reduce quality of life (QoL).^{7,8,11,13,14}

The study by Christensen *et al.*, the only bullying-focused study in paediatric patients with AA to date, revealed that children and adolescents with AA experience bullying at all ages.¹⁵ As this study did not include a control group, it remains unclear whether paediatric patients with AA experience bullying in a comparable frequency or more often than healthy children and adolescents. Other studies suggest that their QoL is significantly impaired compared with their healthy peers.⁸

To address this further, we conducted a cross-sectional European study examining QoL and incidence of bullying in paediatric AA. The aim of the study was to provide a comprehensive quantitative overview of the emotional burden of this patient group and to compare the impact with healthy peers. We tested the hypotheses listed below.

Adolescents with AA report:

- higher levels of victimization through bullying,
- higher levels of victimization owing to hair loss and damaged nails,
- more emotional problems, greater peer problems and a higher total difficulty score on the Strengths and Difficulties Questionnaire (SDQ), and

- more pronounced problems related to emotional, social, and school functioning, as measured by the Pediatric Quality of Life Inventory (PedsQL) questionnaire.

Material and methods

This cross-sectional study adhered to the ethical principles of the Declaration of Helsinki and was approved by the ethics committee of the Charité – Universitätsmedizin Berlin on 21 July 2022 (protocol code: EA2/052/22). Recruitment took place between August 2022 and November 2024.

Recruitment

Adolescents with AA in Germany were recruited through the general dermatology and specialized hair outpatient clinics of the Charité – Universitätsmedizin Berlin, Germany, interest groups for patients with AA, and the clinical research centre for hair and skin science. Additional participants were recruited from five further collaborating hair clinics in France, Greece, Spain, Poland and Italy, primarily recruited through specialized hair clinics at university medical centres during routine clinical visits.

Eligible participants were aged between 10 and 17 years with a dermatologist-confirmed diagnosis of AA. Participation in the study was proposed to the adolescents and their legal guardians, and the study was explained in detail during a joint informed consent discussion. Written informed consent was obtained from both the adolescents and their legal guardians, using two separate consent forms. Students from one primary school and two secondary schools in Berlin, Germany, were recruited for the healthy control group (CG). The study sample size was determined by the number of volunteers who participated.

Data collection

Data were collected using questionnaires. The sociodemographic section recorded age, gender, nationality, education and language of origin. The Revised Olweus Bully/Victim Questionnaire (OBVQ-R) assessed experiences of

victimization by bullying and own bullying behaviour, each with one general item and nine items concerning bullying forms.¹⁶ As the validated translations of the OBVQ-R did not always align with the English original, they were retranslated by a native speaker, back translated by another, and reviewed together to ensure quality of translation. In addition, self-developed questions based on the work of Byrd and Carter Andrews on common reasons for bullying were added to assess whether hair loss or nail damage was reported as a reason for bullying.¹⁷ Psychosocial problems were assessed using the SDQ, which includes scales for emotional problems, conduct problems, hyperactivity, peer problems and prosocial behaviour. Additional scales were also calculated (externalizing problems, internalizing problems, total difficulties score).¹⁸ QoL was measured using the PedsQL questionnaire, which covers the following four domains: physical functioning (i.e. limitations in physical activity, pain or low energy), emotional functioning (i.e. emotional distress and psychological concerns), social functioning (i.e. difficulties with peer relationships and social inclusion) and school functioning (i.e. problems with concentration, learning and school attendance). Additional scales included psychosocial health summary score and total score.¹⁹ Clinical data for the affected group included disease onset, comorbidities, recent therapies and involvement of eyebrows, eyelashes or nails. Hair loss severity was assessed using the Severity of Alopecia Tool score.²⁰ To better reflect the clinical presentations observed, the category 'mixed pattern' (cases with overlapping patterns, such as patchy AA and ophiasis) was applied.

Data and statistical analysis

The data of the AA and CG groups were anonymized and analysed using standardized methods. Factor analyses and Cronbach's α were used to test the dimensionality and reliability of the scales. Normal distribution was tested by the Kolmogorov–Smirnov test and visual inspection of the Q–Q plots. Differences between groups were analysed using *t*-test for independent groups, multivariate analysis of variance, χ^2 tests and/or Mann–Whitney *U*-tests, while correlations were calculated using parametric Pearson correlation and nonparametric Spearman's ρ correlation. A *P*-value of *P* < 0.05 was considered significant unless a Bonferroni correction was applied. Data were organized using RedCap,^{21,22} which is hosted by Charité – Universitaetsmedizin Berlin and analysed using SPSS version 29 (IBM, Armonk, NY, USA). More detailed information on the statistical methods is provided [File S1](#) (see [Supporting Information](#)).

Results

Study population

The study included 417 participants, 261 in the CG and 156 in the group affected by AA. The groups did not differ significantly in terms of gender [$\chi^2(df=1)=2.623$, *P*=0.127, effect size $\Phi=-0.080$]. However, a significant age difference was found [$t(278.03)=4.774$, *P*<0.001, Cohen's *d*=0.508], with the CG being older. In addition, we found a significant

difference in migration background; only 11% of the participants in the AA group had a migration background, compared with 25.3% in the CG [$\chi^2(df=1)=12.289$, *P*<0.001, $\Phi=-0.172$]. Correspondingly, a language of origin other than the national language was spoken significantly less frequently in the AA group [$\chi^2(df=1)=13.842$, *P*<0.001, $\Phi=-0.182$]. Further epidemiological and clinical data can be found in [Table 1](#).

Bullying, psychosocial difficulties and quality of life

Bullying experiences assessment

The results of the OBVQ-R questionnaire are shown in [Figure 1](#). Participants who reported being bullied '2–3 times a month' or more often on the general bullying victimization item were considered as having been victims of bullying. Participants with AA were more often victims of bullying (15.0%) compared with participants in the CG (6.9%) [$\chi^2(df=1)=7.047$, *P* (one-sided)=0.007, $\Phi=0.133$, *P*=0.010].

A closer look at the different forms of bullying showed that verbal bullying, such as being laughed at or called 'mean names', was reported significantly more frequently in the AA group (*U*=16517.50, *z*=−3.506, *P*<0.001, Bonferroni corrected $\alpha=0.006$). In the AA group ($M_{rank}=225.04$, *M*=0.551, *SD* 0.070) the frequency of verbal bullying was higher than in the CG ($M_{rank}=193.02$, *M*=0.294, *SD* 0.053).

The exploratory analysis of bullying behaviour according to the OBVQ-R revealed no significant differences, with a prevalence of reported bullying behaviour being comparably low in both groups. The detailed results are provided in [File S1](#).

Reasons for bullying

Special attention was given to the specific reasons for bullying experiences. Hair loss and/or damaged nails were the predominant reasons for bullying reported by the AA group ([Figure 2](#)), clearly distinguishing them from the CG, where these appearance-related factors were significantly less prevalent (*U*=10362.50, *z*=−10.514, *P*<0.001; AA group: $M_{rank}=253.37$, *M*=2.046, *SD* 1.363; CG: $M_{rank}=165.62$, *M*=1.069, *SD* 0.382). In fact, hair loss and/or nail damage were the least frequently cited reasons for bullying in the CG, whereas the most frequently reported reasons were social rejection (occasionally 18.3%, frequently 3.6%) and body size (occasionally 17.8%, frequently 4.4%). Exploratory analyses revealed that speaking another language was cited significantly more often as a reason for bullying in the CG [*U*=16651.50, *z*=−3.103, *P*=0.002 (two-tailed, Bonferroni corrected $\alpha=0.006$); AA group: $M_{rank}=186.51$, *M*=1.088, *SD* 0.046, CG: $M_{rank}=206.59$, *M*=1.228, *SD* 0.036].

Psychosocial problems

The results of the SDQ questionnaire revealed that adolescents with AA had scores comparable to the CG in most areas ([Table 2](#)). However, significant differences were observed in peer problems, with adolescents in the AA group reporting fewer difficulties. No significant differences were found in emotional problems or the total difficulties

Table 1 Demographic and clinical characteristics of the study population

		AA group (n=156)	Control group (n=261)	
Demographical data	Gender	Male	71 (45.5)	136 (53.5)
		Female	85 (54.5)	117 (46.1)
		Diverse	0 (0)	1 (0.4)
	Age	Mean (SD), years	13.31 (2.15)	14.18 (1.76)
	Country of recruitment	Germany	75 (48.1)	261 (100)
		France	16 (10.3)	–
Italy		18 (11.5)	–	
Spain		11 (7.1)	–	
Greece		26 (16.7)	–	
Poland		10 (6.4)	–	
Clinical data	Type of alopecia	AA circumscripta	81 (51.9)	–
		AA totalis/universalis	50 (32.1)	–
		Diffuse AA	2 (1.3)	–
		Mixed pattern	6 (3.8)	–
		Other type	17 (10.9)	–
		Disease duration, months (n=153)	Mean (SD), months	63.7 (55.7)
	Severity of Alopecia Tool score (n=156)	Mean (SD)	52.6 (37.5)	–
		Mild: 1–20	50 (32.1)	–
		Moderate: 21–49	29 (18.6)	–
		Severe: 50–94	30 (19.2)	–
		Very severe: 95–100	47 (30.1)	–
	Involvement of other body parts	Eyebrows	65 (41.7)	–
		Eyelashes	56 (35.9)	–
		Nails	49 (31.4)	–
	Therapy in the last 3 months? (n=148)	Yes	96 (64.9)	–
Other diseases	Autoimmune disorders (n=153)	20 (13.1)	–	
	Atopic diseases (n=154)	44 (28.6)	–	
	Psychiatric disorders (n=149)	15 (10.1)	–	

Data are presented as *n* (%) unless otherwise stated. AA, alopecia areata.

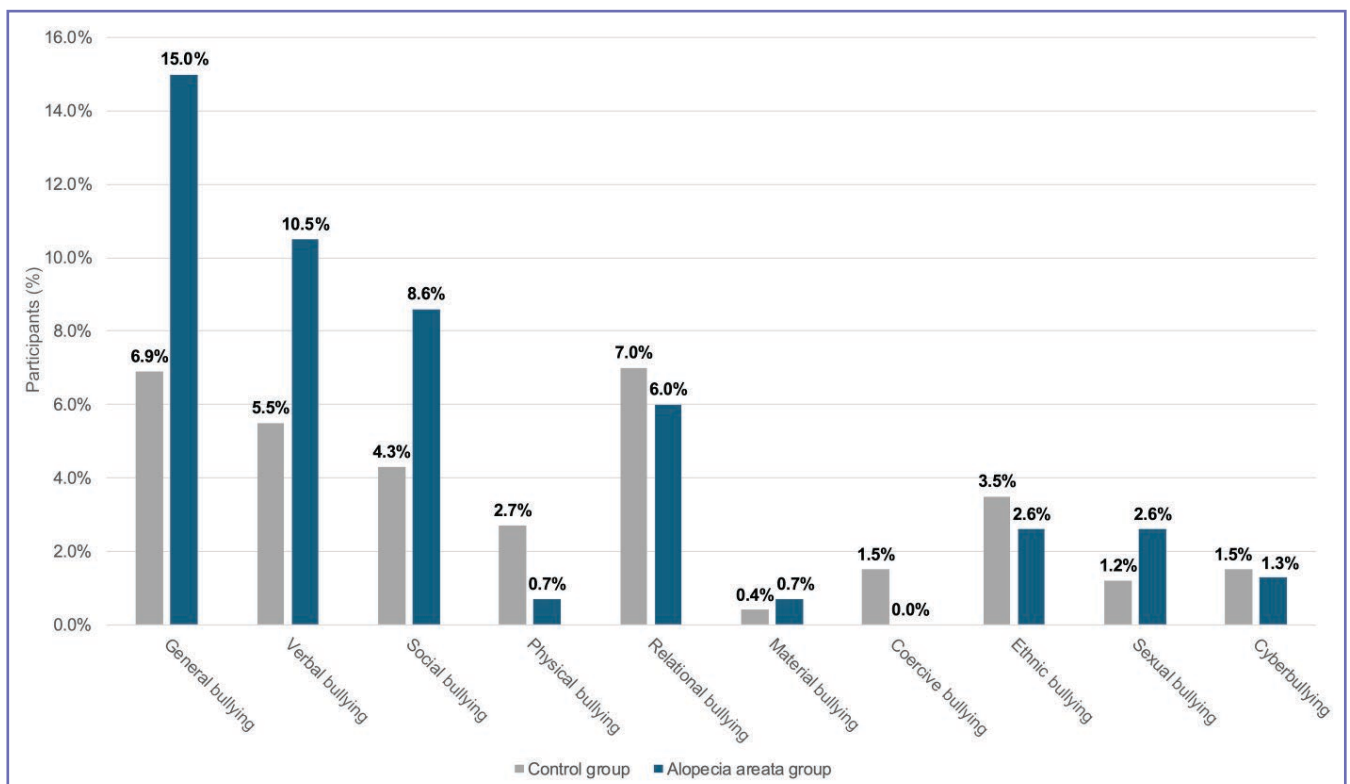


Figure 1 Prevalence of different bullying forms: comparison between alopecia areata and control groups. A participant was considered as being a victim of bullying (yes/no) when reporting the corresponding item '2–3 times a month' or more often. Significant differences in general bullying victimization ($P=0.01$) and verbal bullying ($P<0.001$) were identified between the alopecia areata and control groups based on continuous data regarding victimization, analysed using the Mann–Whitney *U*-test.

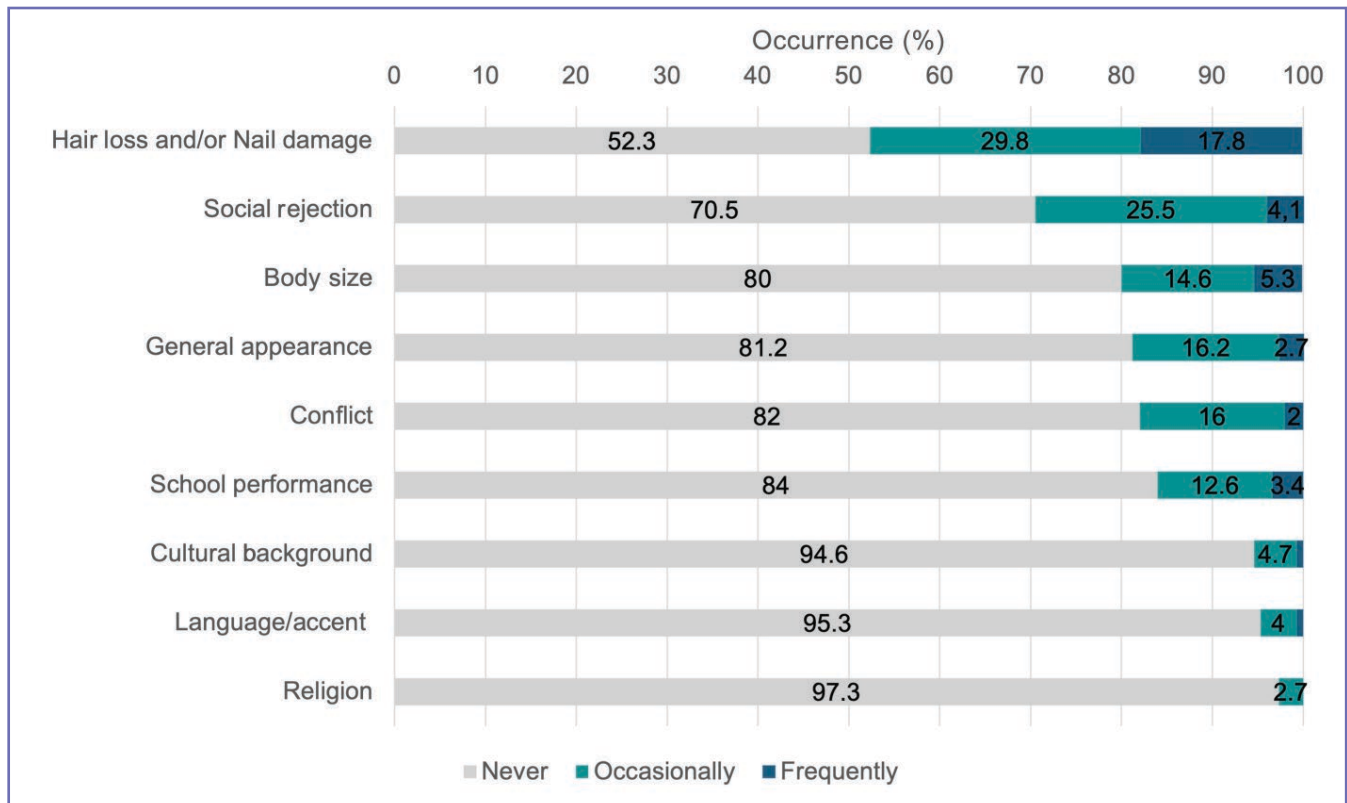


Figure 2 Reported reasons of bullying among patients with alopecia areata. Responses with occurrence rates below 1% were not indicated. For better visualization, ‘rarely’ and ‘sometimes’ were grouped as ‘occasionally’, while ‘often’ and ‘always’ were combined as ‘frequently’.

score. Similarly, the exploratory analysis showed no notable issues in hyperactivity or prosocial behaviour.

Quality of life

The PedsQL showed comparable values between the AA group and the CG in most domains (Table 3). Notably, the emotional, social and school functioning of both groups did not differ significantly. However, a statistically significant difference was observed in an exploratory analysis of physical functioning, with higher scores in the AA group, although both groups showed generally high values.

Nevertheless, the rather low scores in emotional and school functioning in both groups indicate a mild impairment of QoL.

Factors associated with bullying and psychosocial distress

Various factors that were associated with the dependent variables were identified. Gender appeared to influence both bullying and reported psychosocial distress. Female participants reported general bullying victimization more frequently [OBVQ-R nonparametric: ρ ($n=153$) = -0.219, $P=0.007$] and showed higher scores for emotional problems [SDQ parametric: r ($n=156$) = -0.254, $P=0.001$], whereas male participants reported better emotional [PedsQL, r ($n=156$) = 0.328, $P<0.001$] and social QoL [PedsQL non-parametric: ρ ($n=156$) = 0.184, $P=0.021$]. In addition, the duration of the illness was also associated with psychosocial distress. A longer duration of illness was weakly

Table 2 Outcome of the Strengths and Difficulties Questionnaire

Scale	Control group (n=261)		AA group (n=156)		Univariate analysis of variance				
	Mean	SD	Mean	SD	F	df _{effect}	df _{error}	P-value	η^2
Emotional problems	3.5	2.7	3.6	2.7	0.115	1	415	0.734	0.000
Hyperactivity	4.1	2.3	4.2	2.6	0.247	1	415	0.619	0.001
Peer problems	2.6	1.8	2.1	1.9	5.646	1	415	0.018	0.013
Prosocial behaviour	7.7	2.1	8.0	1.9	2.392	1	415	0.123	0.006
Internalizing problems	6.0	3.7	5.7	3.9	0.807	1	415	0.369	0.002
Externalizing problems	5.9	3.0	6.4	3.5	2.500	1	415	0.115	0.006
Total difficulties score	11.9	5.5	12.1	5.9	0.081	1	415	0.776	0.000

Hypothesis test for emotional problems, peer problems and total difficulties score multivariate analysis of variance (MANOVA): $F(3, 413)=3.815, P=0.010, \eta^2=0.027$. Exploratory analyses for hyperactivity, prosocial behaviour, internalizing problems and externalizing problems MANOVA: $F(4, 412)=4.339, P=0.002, \eta^2=0.04$. AA, alopecia areata.

Table 3 Outcomes of the Pediatric Quality of Life Inventory

Scale	Control group (n=260)		AA group (n=156)		Univariate analysis of variance				
	Mean	SD	Mean	SD	F	df _{effect}	df _{error}	P-value	η ²
Physical functioning	83.3	13.8	87.0	14.0	6.866	1	414	0.009	0.016
Emotional functioning	66.5	21.4	65.8	21.8	0.085	1	414	0.770	0.000
Social functioning	86.1	15.5	84.6	18.5	0.814	1	414	0.367	0.002
School functioning	69.0	18.4	71.8	21.3	1.904	1	414	0.168	0.005
Psychosocial Health Summary Score	73.9	15.1	74.1	17.8	0.020	1	414	0.888	0.000
Total scale score	77.1	13.3	78.5	15.5	0.957	1	414	0.328	0.000

Mann-Whitney U-test									
	U		M _{rank}		Σ _{Rank}		P-value	Z	
Social functioning	86.1	15.5	84.6	18.5	20198	AA group: 209.03 Control group: 208.18	AA group: 32608.00 Control group: 54128.00	0.944	-0.070

AA, alopecia areata. Hypothesis test for emotional, social and school functioning multivariate analysis of variance (MANOVA): $F(3, 412) = 1.917$, $P = 0.126$, $\eta^2 = 0.014$. Exploratory analyses for physical functioning, psychosocial health summary score, and total scale score MANOVA: $F(3, 414) = 6.866$, $P = 0.009$, $\eta^2 = 0.016$.

associated with higher scores for emotional problems [SDQ, ρ ($n = 153$) = 0.166, $P = 0.040$] and with poorer school functioning [PedsQL nonparametric: ρ ($n = 153$) = -0.170, $P = 0.036$]. However, no association was found with the age of the participant or the severity of the disease.

Discussion

According to the Health Behaviour in School-aged Children international survey, bullying at school affects approximately 11% of school-aged children.²³ Our study reveals that adolescents with AA are more frequently affected by bullying, particularly in the form of general and verbal harassment, compared with their healthy peers. The visible nature of hair loss in AA often conflicts with societal appearance norms, making affected individuals vulnerable to negative judgement and discriminatory remarks.

It was particularly striking that those affected reported hair loss or nail damage as the main reason for bullying, suggesting that there is a direct link between the visible symptoms of AA, negative social experiences and the occurrence of bullying. This contrasts with the CG, where bullying stemmed from nonappearance-related factors such as language differences. This is in line with the current body of research, which, while limited, strongly suggests a relationship between visible symptoms of AA, visible symptoms of illness in general and increased experiences of bullying.^{6,15} While the results on higher emotional distress in girls with AA are consistent with previous findings,¹² our results on the increased incidence of bullying in girls reveal a different gender pattern than earlier studies, which suggested a male predominance.^{11,15}

Only minor differences were found when analysing QoL. Even though there was a significant difference in physical functioning, both groups showed high scores, indicating that this difference is not clinically relevant. The low scores in terms of emotional and school functioning in both groups were surprising. This is in contrast with another study by

Bilgic *et al.*, which also used the PedsQL and found that the paediatric AA group had a significantly poorer QoL compared with the healthy CG.⁸ It is important to note that Bilgic *et al.* found more differences between the groups in the psychosocial scale. It is also unclear whether we might have found different results with another CG, as the groups differed in several ways, and the PedsQL results for our CG were noticeably different from theirs. Our CG showed a greater prevalence of individuals with a migratory background, which could explain why speaking another language was a common reason for bullying in this group. This finding was possibly related to the geographic location, as Berlin is a diverse, multicultural city.

We found no conclusive associations between disease severity, age and the different scales used to assess QoL or frequency of bullying experiences. This lack of clear correlation is consistent with the existing research, which presents contradictory findings regarding these relationships.¹¹ However, the observed link between longer disease duration and increased emotional struggles may suggest that the chronic nature of AA exacerbates psychological strain over time.

The complex nature of bullying extends beyond the traditional scope of dermatological or paediatric care, highlighting the need for collaborative approaches involving mental health professionals, dermatologists and school counsellors.^{7,24} Various studies suggest that psychological disorders, such as anxiety and depression, occur more frequently in patients with AA.^{7-9,12,25-31} This also underscores the importance of a comprehensive psychiatric evaluation when symptoms are suspected and psychological support and management are clinically indicated.^{5,26,31,32} Additionally, studies indicate that stress factors may contribute to the onset of AA.³² Future research could explore whether identifying and managing stress factors at an early stage might potentially reduce the risk of AA development or the severity of the disease. Once the disease has manifested, targeted educational awareness programmes can help mitigate social and psychological consequences. For example,

as demonstrated by Rangu *et al.*, initiatives that expose children to stories about peers with AA can help reduce stigmatization and bullying by fostering acceptance of physical differences.³³ These approaches may collectively alleviate the psychosocial burden experienced by children with visible conditions. Further research is essential to identify the most effective strategies for both clinical management and addressing social challenges associated with AA.⁴

External generalizability was provided by the selection of the sample and the study design. By recruiting a relatively large population from various settings and countries, the study captures a diverse population. The inclusion of a healthy CG provides a valuable basis for comparison. However, the study also had some limitations. Our selection strategy could have introduced bias, as most participants were patients who were proactively seeking help, either therapeutically or psychologically, possibly experiencing higher distress. While recruitment from multiple European countries helped to increase demographic diversity and reduce potential country-specific biases, thus enhancing the diversity of our sample and improving generalizability, uncontrolled cultural and sociodemographic differences between countries may have influenced results. Additionally, the CG, which was recruited exclusively in Berlin, Germany, differed from our European study group in several demographic aspects, potentially limiting direct comparisons. Additionally, the cross-sectional design limits the analysis of temporal changes or causal relationships.

The lack of validated questionnaires for paediatric patients with AA complicates the systematic assessment of QoL²⁵ and the identification of effective interventions. Further research is necessary to gain a better understanding of the multifaceted challenges of patients with AA, particularly children and adolescents. Such research could pave the way for targeted support programmes and enable cost-benefit analyses³⁴ through systematic QoL assessments. This would help to highlight the impact of AA on children and adolescents in order to offer adequate support. Despite the availability of approved treatments for children with AA, access remains challenging. Treatment costs are often only partially covered or not covered at all by health insurance systems, despite the possibility of an accompanying psychological burden. This imposes a significant financial and mental burden on affected families.³⁵

In summary, our findings indicate that adolescents with AA are more frequently subjected to bullying compared with their healthy peers, especially owing to the visible manifestation of hair loss. These results highlight the importance of considering the psychological impact of alopecia, alongside clinical factors such as disease severity, when making treatment and management decisions.

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Conflicts of interest

U.B.-P. was speaker and/or consultant and/or investigator and/or has received research funding from AbbVie, Adaran, Almirall, Bayer, Amryt, Boots Healthcare, Cantabria Labs, Cassiopeia, CeraVe, Dermocosmétique Vichy, Eli Lilly, FomF, Galderma Laboratorium GmbH, GSK, Infectopharm, Johnson & Johnson, Laboratoires Bailleuil, Legacy, Leo Pharma, Novartis, Pfizer, Pierre Fabre, Sanofi Regeneron and Sun Pharmaceutical. K.H. was speaker for FomF and Investigator for AbbVie, Bayer, Amryt, Cantabria Labs, Cassiopeia, Eli Lilly, Infectopharm, Legacy, LEO Pharma, Sanofi Regeneron and Sun Pharmaceutical. B.M.P. was speaker, consultant or investigator for and has received research funding from Almirall, Difa Cooper, Dercos-L'Oréal, Eli Lilly, ISDIN, Legacy Healthcare, Pierre Fabre-Ducray, Giuliani and Olistic Pfizer.

Data availability

The data that support the findings of this study are available from the corresponding author, upon reasonable request.

Ethics statement

This study was approved by the ethics committee of the Charité – Universitätsmedizin Berlin (protocol code: EA2/242/21).

Patient consent

Not applicable.

Supporting Information

Additional [Supporting Information](#) may be found in the online version of this article at the publisher's website.

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Bimzelx[®] ▼ (bimekizumab) offers the opportunity for complete, fast, and lasting skin clearance and proven PsA efficacy¹⁻⁷

68.2%

(n=238/349)

of patients with PsO achieved **PASI 100 at Week 16**

(vs 1.2% placebo [n=1/86], p<0.0001)****2

75.9%

(n=265/349)

of patients with PsO achieved **PASI 75 at Week 4**

(vs 1.2% placebo [n=1/86], p<0.0001)****2

76.9%

(N=52)[†]

of patients with PsO achieved **PASI 100 at 5 years³**

51.5%

(n=222/431)

50.6%

(n=135/267)

and

of biologic-naïve and TNFi-IR PsA patients achieved **ACR 50 at Week 104/100**, respectively^{†1,4-6}

BIMZELX was well tolerated, the most frequently reported adverse reactions were: upper respiratory tract infections and oral candidiasis. Other common reported adverse reactions include tinea infections, ear infections, herpes simplex infections, oropharyngeal candidiasis, gastroenteritis, folliculitis, headache, rash, dermatitis, eczema, acne, injection site reactions, fatigue, and vulvovaginal mycotic infection (including vulvovaginal candidiasis).⁴

This promotional material has been created and funded by UCB Pharma Ltd and is intended for healthcare professionals in the UK.

BIMZELX is indicated for the treatment of: moderate to severe plaque PsO in adults who are candidates for systemic therapy; active PsA, alone or in combination with methotrexate, in adults who have had an inadequate response, or who have been intolerant, to one or more DMARDs; active nr-axSpA with objective signs of inflammation as indicated by elevated CRP and/or MRI, in adults who have responded inadequately, or are intolerant, to NSAIDs; active AS in adults who have responded inadequately or are intolerant to conventional therapy; and active moderate to severe HS (acne inversa) in adults with an inadequate response to conventional systemic HS therapy.⁴

Prescribing information for United Kingdom click [here](#). Please refer to the SmPC for further information.

These data are from different clinical trials and cannot be directly compared.

Co-primary endpoints PASI 90 and IGA 0/1 at Week 16 were met.**Secondary endpoints. †N= mNRI, missing data were imputed with mNRI (patients with missing data following treatment discontinuation due to lack of efficacy or a TRAE were counted as non-responders; multiple imputation methodology was used for other missing data). ⁴43.9% (n=189/431), and 43.4% (n=116/267) of biologic-naïve and TNFi-IR PsA patients achieved the primary endpoint of ACR 50 at Week 16 in BE OPTIMAL and BE COMPLETE, respectively (vs 10.0% [n=28/281] and 6.8% [n=9/133] placebo, p<0.0001); 54.5% (n=235/431) and 51.7% (n=138/267) maintained it at Week 52 (NRI).⁴⁻⁶

ACR 50, >50% response in the American College of Rheumatology criteria; **AS**, ankylosing spondylitis; **CRP**, C-reactive protein; **DMARD**, disease-modifying antirheumatic drug; **HS**, hidradenitis suppurativa; **IGA**, Investigator's Global Assessment; **(m)NRI**, (modified) non-responder imputation; **MRI**, magnetic resonance imaging; **nr-axSpA**, non-radiographic axial spondyloarthritis; **NSAID**, non-steroidal anti-inflammatory drug; **PASI 75/90/100**, ≥75/90/100% improvement from baseline in Psoriasis Area and Severity Index; **PsA**, psoriatic arthritis; **PsD**, psoriatic disease; **PsO**, psoriasis; **TNFi-IR**, tumour necrosis factor-α inhibitor – inadequate responder; **TRAE**, treatment-related adverse event.

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▼ This medicine is subject to additional monitoring. This will allow quick identification of new safety information. Adverse events should be reported. Reporting forms and information can be found at www.yellowcard.mhra.gov.uk for the UK. Adverse events should also be reported to UCB Pharma Ltd at UCBCares.UK@UCB.com or 0800 2793177 for UK.