

Research on Emotional Changes in Children With Water-Based Nail Treatments—Intervention in a Child Welfare Facility and Examination of Its Effects*

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We investigated the psychological effects of nail treatments on children living in child welfare facilities. We performed a single nail treatment on children living in child welfare facilities. As a result, we found that feelings of “energy”, “relaxation”, and “comfort” tended to increase more strongly after the treatment than before. Furthermore, these feelings increased even more after the nail treatment. The effects of nail treatments were unrelated to gender or previous nail experience. Furthermore, nail treatments increased communication and interaction with facility staff and other children residing in the facility, promoting self-expression, and, as a result, increasing a sense of accomplishment, acceptance from others, and self-esteem. This suggests that positive emotions persisted even after nail treatments, leading to positive changes in daily life.

Keywords: child welfare facility, children, water-based nails, emotions, affectionate touching

Introduction

This study examines the psychological effects of nail treatments on children living in child welfare facilities. Nails have generally been recognized as personal beauty, such as coloring the nails, and have been thought of as similar to makeup. In recent years, many nail salons and other professionals have appeared, and there are also manicurist qualifications. The psychological effects of nail treatments have already been studied in a variety of fields, including the medical, welfare, and social fields.

In the medical field, according to Nozawa (2008), the National Cancer Center Hospital has formed a “cosmetic team” including doctors and nurses, and is running a program called “cosmetic information” that provides information on appearance. Specifically, the program includes “possible changes in appearance”, “mechanisms and progress”, “specific ways to deal with it”, and “nail time”, and is also conducted in outpatient and inpatient wards. In addition, clinical psychologists from the palliative care team, who relieve physical and mental pain, provide individual support to patients. After supporting a cancer patient at his coming-of-age ceremony, the patient began to actively try part-time jobs and even travel abroad in a short period of time. Another patient's level of consciousness decreased a few days before her daughter's wedding, but with the support of the

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cosmetics team, she miraculously opened her eyes and was able to attend on the day. According to Taki (2021), there is a case where the relationship between the patient and the nurse was enriched through a manicure treatment. While helping a schizophrenic woman in her 40s, who had multiple injuries and was paralyzed in both legs, to change her mood, she requested that she be given a manicure. This request was interpreted as a cosmetic need, so the nurse gave her a manicure. As a result, she began to smile and talk to the nurse more often. The act of “making a request” represents a desire for the nurse to “look at me”, and the care of the nurse giving her a manicure is presumably a message to her that she “wants to be interested in me as a person and to care for me”. Through the manicure treatment, she and the nurse were able to build a relationship as people.

In the welfare field, the effectiveness of nail treatments in evoking joy in the elderly, stabilizing their mental health, and promoting communication has been verified in recent years. Sato (2018) administered nail polish to elderly people with dementia and examined changes in their Behavioral and Psychological Symptoms of Dementia (BPSD) and Quality of Life (QOL). In a specific experiment, a comparison was made between the intervention group and the non-intervention group for each measurement item in a four-month nail treatment. As a result, a significant interaction was found for the “severity of BPSD”, and for the “lively interaction with those around you”, “expression of your true self”, and “control of difficult behaviors” in the QOL questionnaire for Dementia (QOL-D). These experimental results showed that the Humanitude techniques of making eye contact, speaking gently and carefully, and touching gently and slowly allow people to feel in contact with others and generate positive emotions through communication and affectionate touching.

In the social field, according to Hiramatsu (2009), the study focused on the everyday emotional regulation of makeup and examined the emotional regulation brought about by nail polish in female students. The Profile of Mood States (POMS) test was used to measure changes in emotions before and after the use of nail polish. The results showed that the use of nail polish significantly reduced “tension/anxiety”, “depression/lower mood”, “anger/hostility”, “fatigue”, and “confusion”, while significantly increased “vigor”. Hiramatsu (2011) also investigated the effect of applying nail polish on regulating emotions in male university students. As a result, the “confusion” subscale score on the POMS was significantly reduced. This result indicates that subjective cognitive and thought disorders were reduced and a state of relaxation was induced. Hiramatsu (2009; 2011) showed that applying nail polish is effective in regulating emotions and relaxation in both male and female university students.

Nail treatment involves physical contact with the hands and fingers in addition to the application of color. Yamamoto (2014) introduced touch care in the nursing setting to alleviate pain, reduce anxiety, and induce relaxation, leading to feelings of pleasure. In touch care, the areas that produced a relaxing effect were the shoulders and the back of the hands. According to Yamaguchi (2014), it is also important to touch areas of the body with less resistance, such as the shoulders, back, and arms. These areas are often touched by others, and are less invasive, so the effects are more easily achieved. According to Yamaguchi (2014), touching the skin causes the release of oxytocin in the brain, which helps build intimate relationships with others.

As mentioned above, research on the effectiveness of nail art on adults has already been conducted. However, the effectiveness of nail art on children has hardly been verified. For children, satisfaction with their appearance is more strongly related to self-acceptance than satisfaction with their academic ability or friendships (Maeshiro, 2000). Body decoration, which is a personal pleasure, includes both private spheres, such as relationships with family and friends, and public spheres such as school (Kazato, 2019). Since the coloring of the body with nail art only lasts for a short time, it is done without teachers at school or club activities knowing and is considered self-satisfaction.

In the past, children's makeup was viewed negatively, and women were expected to start wearing makeup when they graduated from high school or started working, and makeup was seen as part of the grooming required to enter society (Ishii, 2006). However, in recent years, it is not uncommon to see elementary and junior high school students wearing makeup (Mizuno & Tokuda, 2018), and this trend is now extending to young children. The increase in demand for cosmetics for children is due to parents' increased awareness of the importance of grooming and hygiene for their children. In some overseas cases, in play therapy, manicures and pedicures are given to children's hands and feet as a parenting activity to form attachments as part of therapeutic play (Schaefer, 2011). According to NPO Japan Theraplay Association (2024), Theraplay® is a form of psychotherapy and play therapy that is carried out through play based on a unique theory. It is a structured therapy that values the physical and mental contact between parents and children, and emphasizes increasing parent-child attachment, self-esteem, and trust.

The purpose of this study is to clarify what positive changes in emotions can be caused by providing water-based nail treatments to children living in child welfare facilities who have psychological difficulties. We examine whether natural skin contact and communication with children residing in child welfare facilities through a single nail treatment leads to positive emotional responses.

Child welfare institutions are places where children who need social care, such as unaccompanied or abused children, live. As of 2024, there are approximately 600 child welfare institutions nationwide, housing approximately 25,000 children aged 2-18 years old (All Japan Council of Child Welfare Institutions, 2024). 65% of the reasons for admission are due to abuse (including child abandonment), which often affects the children's physical and mental development and requires specialized care. These children often have various problems in emotional development and lack stable attachment formation. As a result, some children have a weak ability to understand the emotions of themselves and others, a negative self-image, and are indifferent to their appearance.

The results of previous research on the positive effects of nail treatments on adults suggest that they will also affect children. Many children living in child welfare institutions do their own nails and manicures. This study will contribute to the mental and physical development of children living in child welfare institutions.

Methods

Survey Period

The survey period was from November 5, 2022 to February 18, 2023.

Survey Participants

The survey participants of this study were 47 elementary and junior high school students (12 boys and 35 girls), aged 6-15 years old living in six child welfare institutions in the Kansai region (Table 1). In addition, unstructured interviews were conducted with the heads or staff of the six child welfare institutions.

Stimuli

The nail paints used in this study were about 30 colors from Ueba Esou Co., Ltd.—Gofun Nail, Sobi Japan Co., Ltd.—Ai Treatment Care Nail, and other companies (Figure 1). The survey participants, in consultation with the survey executor who performs the nail treatment, chose from the nails in Figure 1, selected their favorite nail art from the nail designs in Figure 2, and were also able to arrange them in their own way, as shown in Figures 3 and 4.

Table 1
Survey Dates and Numbers of Surveyed at Each Facility

Facility	Survey date	Number of people
A	November 5. 2022	6 (Boys1, Girls5)
B	December 11.	10 (Boys6, Girls4)
	December 17.	6 (Boys2, Girls4)
	December 18.	3 (Girls3)
C	December 24.	5 (Girls5)
D	January 28. 2023	8 (Boys2, Girls6)
	February 18.	2 (Boys1, Girls1)
E	December 29.	3 (Girls3)
F	December 4.	4 (Girls4)



Figure 1. Water-based nails.



Figure 2. Nail sample.



Figure 3. Nail treatment image for an eight-year-old girl.



Figure 4. Nail treatment image for an eight-year-old boy.

Data Collection

The following 1 and 2 were carried out to examine the change in mood caused by nail treatment.

1. Participants were asked to fill out a face sheet (including the age, grade, and gender of the survey participants).

2. Participants were asked to fill out a Diagram of Mood States (DMS) at three points in time: before the water-based nail treatment, immediately after the treatment, and one to six hours after the treatment (hereafter referred to as 1-6 hours after treatment), to examine the effects of mood and emotions. The timing of responses varied depending on the survey participants at 1-6 hours after treatment. The time required to respond at each point was about 30 seconds. This scale is possible for even five-year-old children to respond.

Ethical Considerations

Informed consent was obtained from the children and from the facility director, who is responsible for the protection of children. The process of the nail treatment was explained to the participating children in advance, and they were told that they could stop halfway through, that it was not compulsory, and that they could participate only when they wanted to. The time for nail treatment and the time for the children to choose their nail color and design were adjusted to suit the children's pace.

At the time of the survey, the novel coronavirus (COVID-19) epidemic was in progress, so the author had received the COVID-19 vaccine and performed nail treatment under strict infection prevention measures.

This study was conducted with the approval of the ethical review board established at the author's affiliated institution (approval number: 202204).

Results

Table 2 shows the results of the DMS of 47 survey participants. After nail treatment, participants were more likely to feel “energetic”, “relaxed”, and “comfortable”. In addition, the increase in feelings continued and tended to increase even 1-6 hours after treatment. A one-way analysis of variance was used to verify whether there were significant differences in DMS between before treatment, immediately after treatment, and 1-6 hours after treatment. The results showed significant differences for all three evaluation items: “feeling energetic” ($F(2, 44) = 53.3, p < 0.001$), “feeling relaxed” ($F(2, 44) = 32.4, p < 0.001$), and “feeling comfortable” ($F(2, 44) = 51.1, p < 0.001$). Sub-tests showed that for all three evaluation items, both scores in immediately after treatment and 1-6 hours after treatment were significantly higher at the 0.1% level than before treatment. There were no significant differences between immediately after treatment and 1-6 hours after treatment.

Table 2

Results of DMS Ratings Before and After Nail Treatment (n = 47)

Evaluation items	Treatment before	Treatment immediately after	Treatment 1-6 hours later
Energetic	7.0	8.8	9.0
Relaxed	6.9	8.6	8.7
Comfortable	14.0	17.4	17.7

To verify the effect of the treatment on gender differences and the presence or absence of nail experience, a two-factor analysis of variance was conducted on the feelings of vitality, relaxation, and comfort, both with gender (male, female) $\times$ assessment time (before treatment, immediately after treatment, 1-6 hours after treatment), and nail experience (presence, absence) $\times$ assessment time (before treatment, immediately after treatment, 1-6 hours after treatment). The results showed no significant differences in either gender or the presence or absence of nail experience for the feelings of vitality, relaxation, or comfort.

Followings show the results of interviews with staff at child welfare facilities. The interviews showed trends such as improved awareness of children’s grooming, a sense of security regarding physical contact, improved self-determination and self-affirmation, and promotion of consideration for others and a desire for recognition.

- Having nails done made it possible for children to be conscious of their own nails, which prompted them to groom themselves by cutting their nails, etc.
- Even children who avoid physical contact and who are reluctant to interact with others due to experiences of abuse may feel that it is okay to interact with others by using nails as a tool.
- Choosing the color and design is a self-decision, and I think that creating and completing nail art together through conversation raises a child’s sense of self-esteem.
- She felt happy to have her nails done. When she got into the bath, she made a fist (palm curled inward with all fingers bent) to keep her nails from getting submerged in the water so they would not come off.
- I was able to encourage my child to keep her room clean if she was going to keep her nails clean. I was able to encourage her by saying, “If your nails are clean, let’s keep your room clean too”. Rather than criticizing the room for being dirty, I thought that feeling that it was clean and comfortable could be applied to other things.
- She also learned and practiced waiting when it was her turn to have her nails done.
- After getting their nails done, they seemed to want to go out and show them to people. They showed them to the staff who came the next day. I thought this would lead to a desire for recognition, such as being seen and recognized.

- The children are starting to want to paint other people's nails. The children are painting the staff's nails. This triggered their desire to do things for others.
- This triggered their desire to do things for others because they were happy.
- Author: "There was also a child whose mother used to have her nails done. I thought that there were all kinds of backgrounds for each child at the facility, so I did not ask too much about whether their memories were good or not, and I did not know whether they were good memories or not. I decided not to ask too much". Facility director: "That's something that the on-site staff should do. I think they've been given that opportunity. For example, if a child says, 'I loved my mommy', the staff member can ask, 'Did you love your mommy?' and the child can answer, 'I hated having to wait so long. I thought it was unfair that I was the only one getting to splurge like that'. In that case, the staff member can ask, 'How did you feel when you had your nails done?' The child can then say, 'I realized that having my nails done made me feel happy, and I felt that my mother's feelings at the time were also good'. They may realize that they understand the feelings of others. I think that coming to the facility and experiencing nails are a great opportunity. By experiencing it for themselves, their memories and understanding may change. Sometimes it takes time to understand."

Discussion

In a previous study (Hiramatsu, 2009) that measured the changes in emotions before and after using nail polish on female students using POMS, the results showed that "tension/anxiety", "depression/lowering", "anger/hostility", "fatigue", and "confusion" significantly decreased, and "liveliness" significantly increased. The results of this study showed that nail treatments have the same effects on children as they do on female university students.

In addition to the effect of the nail itself, there are also points to consider regarding the skin contact. Even for children who are shy around others or have difficulty trusting others, skin-to-skin contact occurred naturally through hand contact when the author performed the nail treatment. Several children commented that it felt good during the treatment. It was found that nail treatment leads to relaxation in children and brings out feelings of pleasure. Furthermore, it was found that communication naturally took place through the nail treatment, which brightened their mood. It is believed that the children naturally chose the color and design for themselves through conversation with the author. They felt a sense of accomplishment and satisfaction when their nails were completed. In addition, they could look at their nails at any time, and others in the facility sometimes said that they were "cute" or "cool". As a result, they gained a sense of acceptance from others, their self-esteem increased, and it is assumed that positive feelings remained high even 1-6 hours after the nail treatment.

On the other hand, gender and experience with nail treatment did not affect the DMS evaluation results. The reason for this is that there is no gender difference in the feeling that nails are "cute" or "cool" when viewed after nail treatment, and it is presumed that this is the result of the aesthetic sense that all children have.

General Discussion

In this study, a single treatment was performed on children residing in a child welfare facility. The results showed that giving nail treatments to children generally led to positive feelings of "feeling energetic", "relaxed", and "comfortable" (Table 2). There were no cases of discomfort due to the nail treatment. In addition, it was found that communication and interaction with facility staff and other children increased, and self-expression led to a sense of accomplishment and acceptance, which led to sustained positive feelings.

The children were serious about choosing colors and designs and decorating their bodies. Most of the children talked about their preferences, such as “I want this color next time”. At first, it took a long time to choose nail colors and designs, but gradually they began to try their favorite colors and designs, and their speed of selection also increased. It is also important that this process of selection gave rise to the children’s desire and desire to have nails that reflect what they thought was “cute” and “cool”, and that they made the decision of their own volition.

This choice has two roles. The first is self-expression and acceptance. Sometimes the children began to talk about their feelings during the treatment, and the author’s listening deepened the relationship. In the process, this led to encouraging non-verbal communication, which resulted in the creation of a relationship. Murase (2009) discussed the importance of the therapist as a listener. Specifically, in order for children to regain something to rely on within themselves, they need three things: (1) to regain their footing as a recognized and irreplaceable being, (2) to feel someone watching over them and to have someone who will listen to them, and (3) to find a way to heal their own hearts, in other words, to have a wide range of interests outside of schoolwork and become an open being. The second is self-determination. The children’s choice of various colors and designs heightened their interest in color.

The selection process fostered the children’s desire to have nails that reflected their desired “cuteness” and “coolness”, and it is important that they made the decision of their own volition. The completed nails were done by the author, but the children had thought about and decided on their own the color and design, and which finger to put which art on. It was found that these self-determinations gave the children a sense of accomplishment and satisfaction from the feeling of “cuteness” and “coolness”. In relation to this self-determination, Kawata and Koike (2021) proposed nurturing the ability to make self-determination as a means of supporting children who do not attend school. In this study, the children were able to choose from approximately 30 nail designs (Figure 1), select their favorite art from nail designs (Figure 2), and further arrange them in their own style (Figures 3 and 4), which can be interpreted as naturally encouraging self-determination.

Several children said that the treatment “feels good”. It was found that some children felt comfortable and happy when their hands touched the author’s hands through nail treatment. Similar to the touch care introduced in Yamamoto (2014) for pain relief, anxiety reduction, and relaxation, this study showed that the hands also had a relaxing effect. In addition, similar to the results of the study in Kawakubo and Kasahara (2015), it is speculated that there was also a sense of specialness in receiving treatment from a skilled other person. Although physical contact with a stranger feels resistant, according to Ikeyama (2023), having someone care for your hands while maintaining a good distance makes it easier to relax and relieve tension.

From the interaction with the author, who was the practitioner, it is speculated that the children felt that they were touched gently and carefully and gained a sense of acceptance. It is rare for children to be able to freely choose the color and design of their nails when they receive treatment from a manicurist, so it is a fresh experience for them. It was found that the children were seriously decorating their bodies for this once-in-a-lifetime experience.

Furthermore, the nail treatment evoked positive emotions not only in the children, but also in the facility staff and other children. Mita (2008) argued that “beauty” cheers up both the person and those around them, and that even if an elderly person is bedridden, grooming them will brighten their expression, and seeing their happy state will make their family happy. In this study, as in Mita (2008), nail treatments were sometimes discussed in child welfare facilities, and it was found that they improve human relationships within the facility.

This study was able to obtain the cooperation of many child welfare facilities. One reason for this, as can be seen in the content of the unstructured interviews, is that the head of the child welfare facility or the facility staff had a positive and proactive view of giving nail treatments to children. This can be seen in the staff's opinion that "I am conscious of my nails. I want children who do not know what it means to be beautiful to know that they are beautiful". This shows that the element of nails has a strong positive image even among adults. From the perspective of the facility staff, nails were recognized as a tool to let people know about "beauty". It is thought that not only does it have a positive image, but it can also be used as a material to teach children.

It is believed that nail treatments allow children to learn about fashion while enjoying color, heighten their visual sensibility and sensitivity, and contribute to their physical and mental growth. Nail treatments can be a place to convey correct knowledge about fashion education to children. It can play a role in supporting child-rearing.

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