

Study on searching the  
comfortable lighting color for  
patients with Alzheimer's disease  
and their family

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# Purpose

It hasn't been known...

- how the patients with AD caught the color .
- which color they often used or made them feel happy.

**Study 1** : To search the relationship between the notion and the color for the patients with AD & their families.

**Study 2** : To search how they feel under the color lighting.

# Method(Study1)

## Subject:

26 patients with AD(7 males & 19 females)  
31 persons (20 males & 11 females←The Patients' family)

**Instrument:** Color card(5×5cm,13colors.Fig1)



Fig.1 Color card

**Experimenter:** Color-producer

Experimental scene: Patients' hospital room

Procedure:

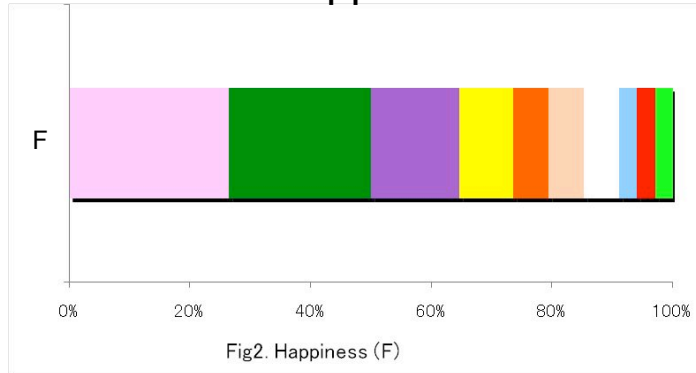
- ① The experimenter lined up 13 color cards in front of the patients and their family
- ② The experimenter asked “Which color do you think does signify ... ?”

Happy/Sadness/Anger/Sexiness/success/Spirit

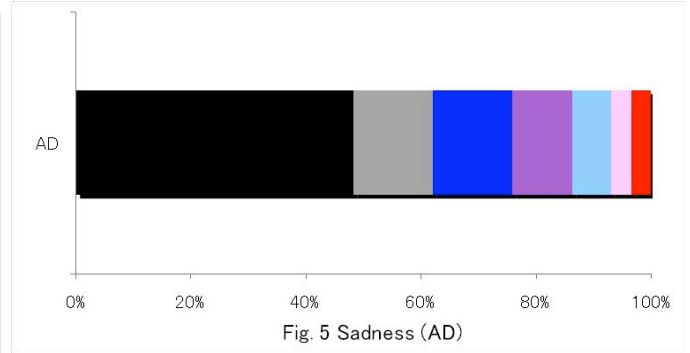
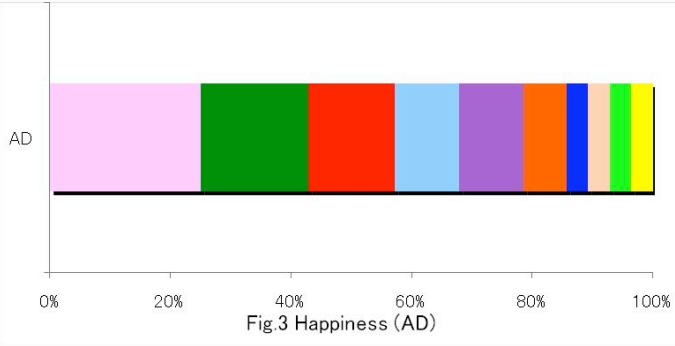
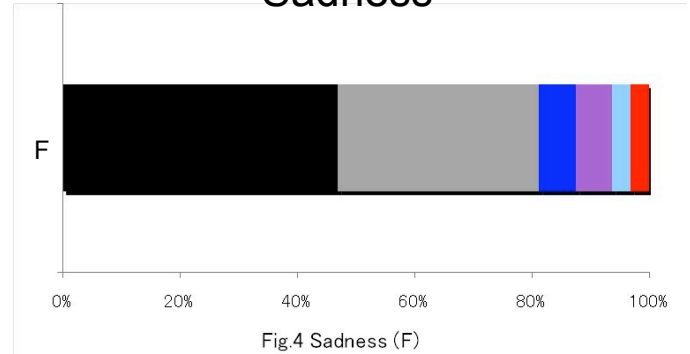
- ③ They selected the one suitable color among 13 color cards.

# Results(Study1)

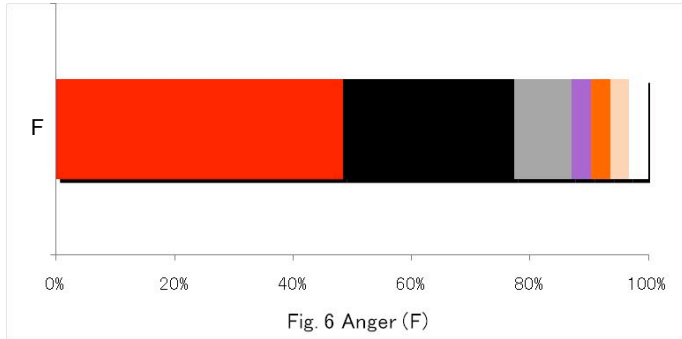
## Happiness



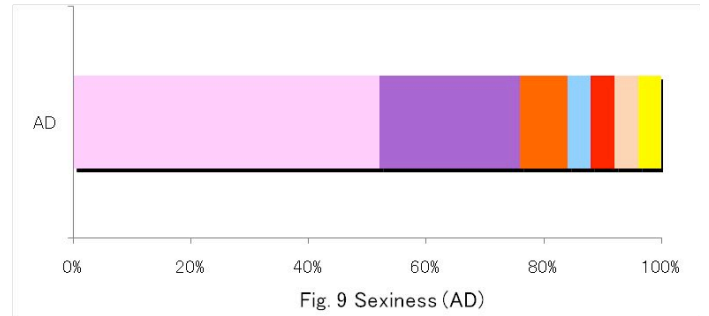
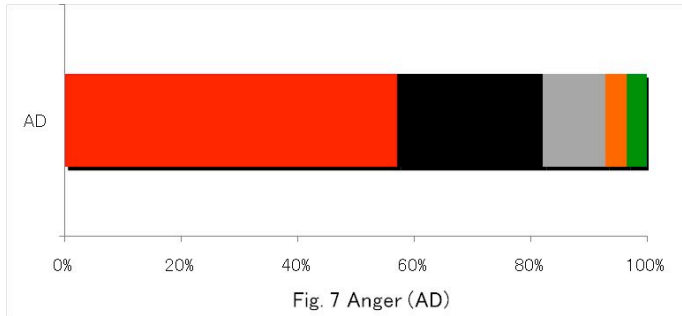
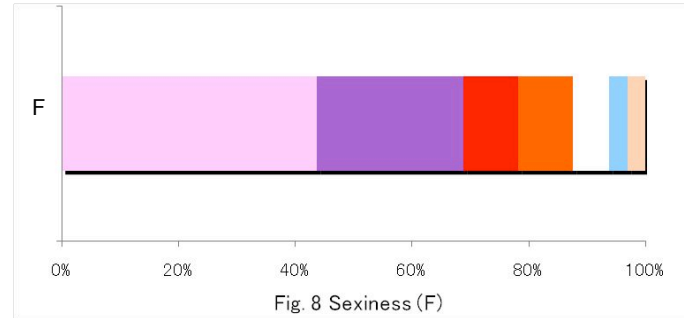
## Sadness



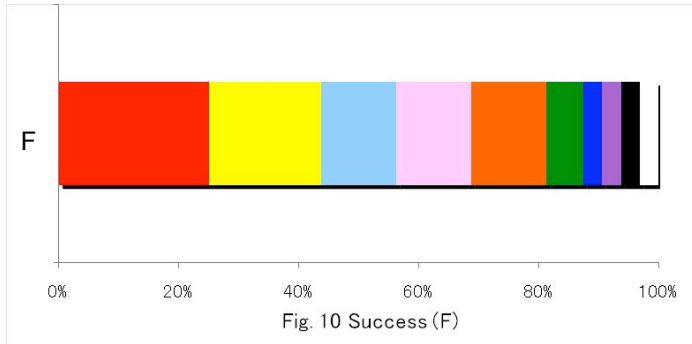
## Anger



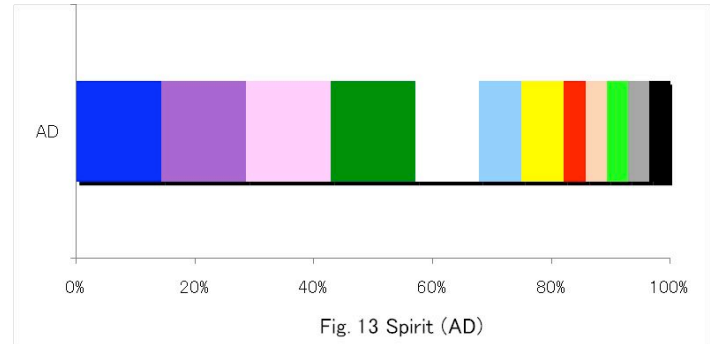
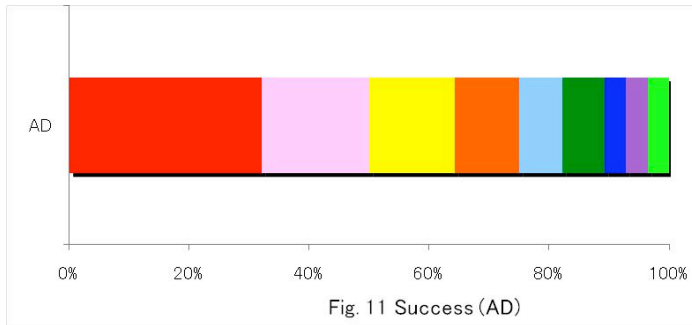
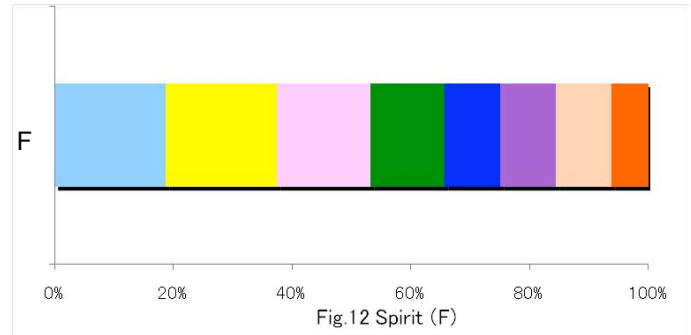
## Sexiness



## Success



## Spirit



We focused on the three high-ranking colors.

◆ Happy/Sadness/Anger/Sexy/Success

Patients & Families :

⇒ Almost **the same colors**

◆ Spirit

Patients : Many selected the cold color.

Families : Many selected the warm color.

⇒ Almost **the different colors**



## Consideration(Study1)

◆ Both the patients & the family selected almost **the same colors** as the ones which signified some notions.

- Both of them could understand the question.
- A color was likely to be the symbol of a notion.
- The colors might be a substitute for the words.

⇒ The one of the tools to communicate with the patients.

## ◆ Spirit color

Many patients with AD selected the cold color as the spirit color. The cold color was said to be “the retreated color”. They may feel the spirit far from them.

## ◆ Happiness color --- Pink

Many selected the pink as the happiness color. In Japan, many of us associate the pink with cherry blossoms. When they are at their best, we enjoy seeing them with our friends happily. So pink may be the happiness color.

# Method(Study2)

## Subjects:

Table1 Age & average neuropsychological test score

	Family	eAD	mAD	F-value	
Age	72.7±9.2	75.2±6.2	76.0±9.5	0.64	n.s
Mals:females	8 : 17	2 : 7	2 : 8	( $\chi^2=1.52$ )	n.s
RBMT(SPS)	18.8±3.4	7.6±4.1	1.8±1.3	102.94***	mAD<eAD<F
MMSE	27.0±2.1	23.2±2.3	15.8±2.6	79.38***	mAD<eAD<F

$p^{***}<.001$

**Experimental Scene:** Room illuminated by the Light Emitting Diode (LED:made by SHARP)of pink(Fig. 14)

## Procedure:

- ① For about 10 minutes, we spent chatting.
- ② The experimenter asked them to evaluate how vigorous (& happy & relieved) they felt at three levels of Yes, No or So-so.



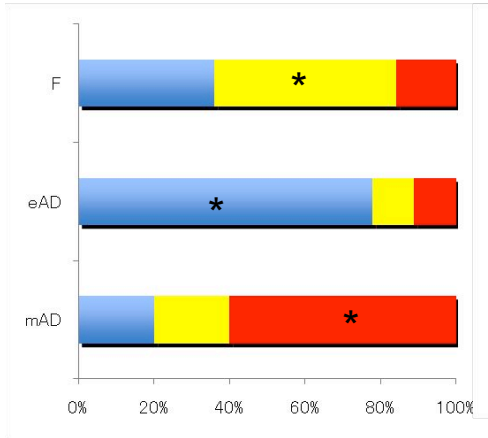
Fig. 14 The room illuminated by the pink LED

Why did we use the pink LED?

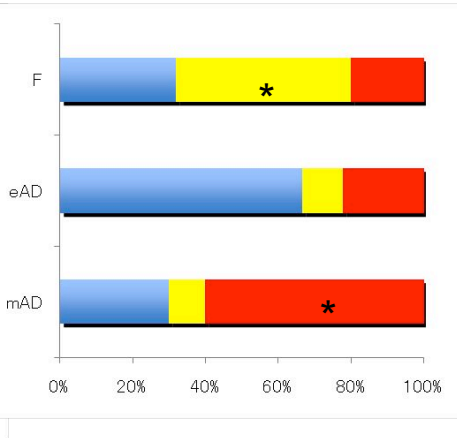
We wanted to suggest the color lighting which made them feel happy.

In the study1, the pink was the most selected color as the one which signified happy, which none selected as anger & sadness.

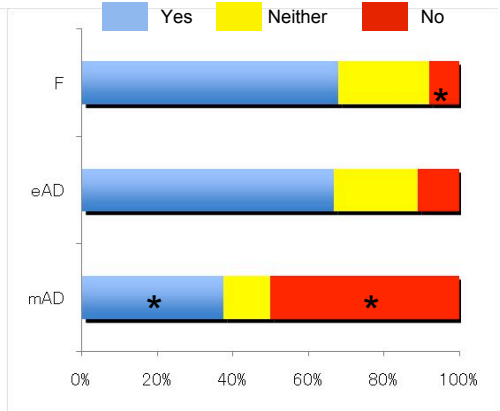
# Results (Study2)



**Fig. 15 Vigor**



**Fig. 16 Pleasure**



**Fig. 17 Relief**

Table2 Result of Study 2

	Family	eAD	mAD
Vigorous	😊	😄	😞
Happy	😊	?	😞
Relieved	😊	?	😞

## Consideration (Study2)

### ◆ Under the pink LED

- The patients with mAD: **Negative impression**  
⇒ The pink light differed from the usual (the incandescent light). So they might be anxious about the new color lighting.
- The patients with eAD & the families:  
**Positive or so-so impression**  
⇒ The pink light might cheer people up.

It might be good for us to get used to the lights which made us comfortable.

The pink signifies one's youth(Birren,1984).

The youthful memory might come back under the pink light. It is said the patients with AD forget the present episode, but remember the past. We hope under the pink light the conversation about the good old days with their family might become lively.

Actually during this study some talked about when they got just married.

## Conclusion

We need to study about what symbolizes the color further.

⇒ We may be able to use the colors as the tool to communicate with the patients with AD.

It is the possibility that the color lighting might make people feel comfortable.

⇒ We need to study the possibility of the color lighting except pink.

Many were quietly dressed.

We want everyone to enjoy the color!!