

# TZU CHI NURSING CARE

*With the Compassion of Bodhisattvas,  
Where Ever Sufferings Are, We Are.*





Heart-  
Soothing



Vegetarian  
Flavors







## About the Cognition and Experiences of Vegetarian Diet of Nurses in Tzu Chi Hospitals



**By Lin Shih-Chun, Nursing Department Supervisor, Dalin Tzu Chi Hospital**

In recent years, media reports covering numerous celebrities in Europe and America who advocate healthy, low-carbon lifestyles to make a contribution to saving our planet have sparked a wave of vegetarianism. For instance, at the Golden Globe Awards ceremony in July, 2022, plant-based meals were served to over 1,000 movie stars present at this gala event. The goal was to demonstrate the rising concern about global warming in the global movie and entertainment industry and show support for environmental protection actions by championing vegetarianism.

The Tzu Chi Medical Mission, which has its origin in the foundation of Hualien Tzu Chi Hospital in 1986, currently encompasses seven Tzu Chi Hospitals and one clinic. All institutions of the Tzu Chi Medical Mission serve vegetarian meals and we advocate vegetarian diets in our hospitals among patients and their family members. We also ensure that all convenience stores, restaurants, and cafes in our hospitals provide vegetarian meals. The cover story of this issue in which the Nursing Department of Dalin Tzu Chi Hospital aims to give readers a better understanding of the cognition and

## Basic Statistics

Gender	Number of People	%
Female	1,054	93.4
Male	74	6.6
Total	1,128	100.0
Age	Number of People	%
under 20	5	0.4
21~25	297	26.3
26~30	234	20.7
31~35	145	12.9
36~40	127	11.3
above 40	320	28.4
Total	1,128	100.0
Years worked in the hospital	Number of People	%
under 1	142	12.6
1.1~2	107	9.5
2.1~3	105	9.3
3.1~5	172	15.2
above 5	602	53.4
Total	1,128	100.0

experiences of vegetarian diets on the part of Tzu Chi nursing personnel and provide a reference for future vegetarian and health management-related activities.

The Nursing Department distributed e-questionnaires to all nursing personnel of Tzu Chi Hospitals for this cover story. A total of 1,128 valid questionnaires have been received.

### **Vegetarianism as an Expression of Compassion Based on Non-Killing Conducive to Emotional Stability**

Vegetarianism is defined as follows in this article: vegan, ovo-lacto, and “five pungent spice” vegetarian diets. Only less than 5% (375 million) of the global population of 7.9 billion are vegetarians. India is the country with the highest percentage of vegetarians (around 31%). Taiwan is ranked second with a total percentage of around 10-13% or 3-3.3 million individuals based on different data sources.

Job Title	Number of People	%
Registered nurse	865	76.7
Deputy head nurse	32	2.8
Head nurse	61	5.4
Supervisor and above	19	1.7
Case manager / functional unit	50	4.4
Nurse Practitioner / senior RN	101	9.0
Total	1,128	100.0
Department	Number of People	%
Internal Medicine	189	16.8
Surgery	159	14.1
Pediatrics	36	3.2
Obstetrics & Gynecology	49	4.3
Intensive Care & ER	199	17.6
Functional Unit	18	1.6
Kidney Dialysis	47	4.2
Operating Room	78	6.9
Outpatient Clinic	200	17.7
Palliative Care	28	2.5
Administration	21	1.9
Psychiatry	36	3.2
Others	68	6.0
Total	1,128	100.0

The results of this questionnaire survey reveal that 11.7% of the Tzu Chi nursing personnel are vegetarians (1.2% have been vegetarians since their fetal stage). This percentage is roughly equivalent to the vegetarian rate of the whole country. If the age bracket (most nurses are aged between 20-60) is taken into consideration, the vegetarian rate of Tzu Chi nursing personnel is probably slightly higher than that of all Taiwanese citizens in the same cohort, but this is just a speculation.

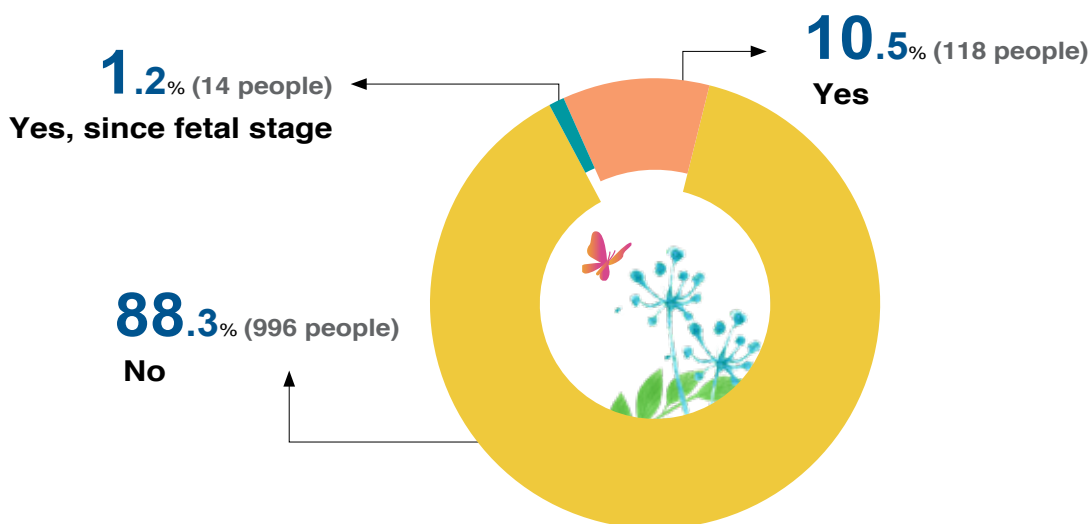
As for physiological or psychological effects of vegetarian diets, 43.9% and 34.8% of the surveyed vegetarian nurses (sample size of 132) believe that “they have become more benevolent since they are no longer involved in the killing of living beings” and that “they have become a more emotionally stable person.” 24.2% noticed that their “skin has become more radiant” and that their “chronic disease-related values (e.g., cholesterol, low-density lipoprotein, uric acid, blood glucose, and blood pressure) have shown significant improvement.” Some respondents claim that vegetarian diets are conducive to weight control and mental well-being.

However, a small number of the surveyed vegetarian nurses stress negative effects they have personally experienced such as weight gain within a short period of time, poor stamina, and rapid weight loss. It is therefore evident that changes to dietary habits must be based on accurate and balanced nutritional concepts to maximize the health promoting effects of plant-based diets.

Q1

### Are you vegetarian( plant-based diet)?

( N = 1,128 )



Hsiao-Tzu, one of several interviewed nurses of Dalin Tzu Chi Hospital, became a vegetarian two years ago. She shared her own story with us. “Clinical work is extremely stressful and the shift work messes up the sleep cycle. I used to rely on high-calorie fast food to release my stress, compensate for the hard work, and reward myself. I often had late-night snacks. As a result, I gained weight and got out of shape rapidly. When I noticed I had breathing difficulties, I knew I couldn’t go on like this. I therefore decided to switch to a vegetarian diet and take up an exercise regimen. I lost five kilograms over a period of several months. As a result, my body became lighter and I felt refreshed and rejuvenated!”

Another RN told me that she decided to follow suit and become a vegetarian in line with the promotion and advocacy campaign of the hospital. She relies on soybean-based foods as her main source of protein. She confessed that she couldn’t get used to eating these foods due to the overpowering bean flavor. Consequently, she abandoned vegetarianism after a while.

### **Protection of Animals’ Right to Life Through Adoption of a Low-Carbon Healthy Diet**

The next section of the survey aimed to determine the cognition of vegetarian diets on the part of Tzu Chi nursing personnel. 68.8%, 65.9%, and 58.3% of the surveyed nurses believe that vegetarianism “reduces the carbon footprint”, “protects animals’ right to life based on the concept of nonkilling”, and that “accurate and balanced vegetarian diets are beneficial to physical and mental well-being”, respectively. The next most common answers were “prevents extreme climate patterns and thereby reduces the incidence of natural disasters” (44.9%), “reduces the risk of strokes and cardiovascular disease” (37.0%), and “reduces the risk of chronic diseases other than strokes and cardiovascular disease” (34.3%); and followed by “Reduces the risk of cancer” and “mitigates obesity”.

Despite the fact that a majority of the surveyed nurses selected reduction of carbon footprints as the most important benefit of vegetarianism, the actual percentage of less than 70% seems a bit low (we expected at least 80% of the respondents to select this item) in view of the all-out commitment of Tzu Chi Foundation and all hospitals of the Tzu Chi Medical Mission to the promotion of relevant concepts and adoption of concrete action in the fields of environmental protection, carbon reduction, energy conservation, and vegetarianism. We surmise that this can be attributed to the fact that junior RNs who strive to gain a foothold in their clinical careers lack a clear grasp of information not directly related to their careers. Fortunately, the awareness of the

benefits of vegetarianism in the field of disease risk prevention is gradually increasing.

In coordination with carbon reduction and energy conservation efforts in response to climate change and global warming and in light of the rising evidence of the health promoting effects of vegetarianism, international organizations successively promote vegetarian or plant-based diets. Based on their research findings, numerous scholars recommend the prevention of chronic diseases such as cardiovascular disease, cancer, and Type 2 diabetes through a high intake of plant-based foods such as fruit, vegetables, whole grains, nuts, and beans. Empirical studies also recommend daily intakes of fruit and vegetables (800g), whole grains (200g), and nuts (15-20g) to ensure a perfect plant-based diet that effectively prevents chronic diseases. These studies further point out that their results are consistent with relevant findings in the field of epidemiology. For instance, it has been corroborated that a sufficient intake of fruit and vegetables, whole grains, and nuts can lower the risk of coronary artery disease (diets rich in fruits & vegetables and whole grains can also reduce the incidence of strokes and Type 2 diabetes, respectively). A high intake of fruit and vegetables, in particular, can decrease the risk of various types of cancer. It is therefore evident that vegetarian diets have a crucial impact on our health.

### **40% Flexitarians – Health-Promoting Effects of Diets Rich in Fruit and Vegetables**

Despite the fact that only slightly more than 10% of the surveyed nurses are self-declared vegetarians, we asked all respondents about their life experiences to determine the percentage of nurses who are willing to select vegetarian meals when ordering takeout or delivery. A total of 41% of all survey participants are willing to eat vegetarian meals three times or once a day, once a week, or once a month. 46.3% selected “not sure, depends on my mood”. Only 12.7% stated unequivocally that they wouldn’t choose vegetarian meals.

CommonWealth Magazine published an article titled “What you should do for your health this year is eat more vegetarian meals” in early 2020. This article mentions the dietary term “Flexitarian Diet”, which is a combination of the words “flexible” and “vegetarian” and refers to a semi-vegetarian style of eating that encourages eating less meat and more plant-based foods to gain health benefits. A media report reveals that flexitarians accounted for 42% of the world population in 2020. The percentage of flexitarian Tzu Chi nurses is even higher since only 12.7% of the survey participants reject vegetarianism and will therefore never be flexitarians.

Due to their heavy workload, clinical nurses tend to prefer simple and convenient food for their meal breaks. They usually have their meals in the staff canteen and cook



# Q2

## The physiological or psychological effects of your vegetarian diet?

( N = 132, multi-choices)

No-killing & then become more benevolent **43.9%**

Emotionally stable **34.8%**

Skin has become more radiant **24.2%**

Chronic disease-related values (e.g., cholesterol, low-density lipoprotein, uric acid, blood glucose, and blood pressure) better **24.2%**

Effective weight control **15.9%**

Sleep well & be more energetic **10.6%**

Got fat in a short period of time **7.6%**

Got weaker & dizzy **6.8%**

Become skinny in a short period of time **3.0%**

Others **11.4%**



by themselves or eat out after work. Due to the promotion of vegetarian diets in hospitals and exposure to a growing trend of vegetarianism over an extended period, they are also more and more willing to consider ordering vegetarian, plant-based meals.

As a matter of fact, due to the rising emphasis on health and fitness, vegetarian, plant-based meals enjoy growing popularity as an alternative food option. Restaurants

Q3

As you know , the benefits of vegetarian diet?  
( N = 1,128, multi-choices )

Reduces the carbon footprint **68.8**

No killing, protect animal living rights **65.9**

Accurate and balanced vegetarian diets are beneficial to  
physical and mental well-being **58.3**

Prevents extreme climate patterns and thereby reduces the  
incidence of natural disasters **44.9**

Reduces the risk of strokes and cardiovascular disease **37.0**

Reduces the risk of chronic disease other than  
strokes and cardiovascular disease **34.3**

Reduces the risk of cancer **28.9**

Mitigates obesity **25.9**

Improves physical endurance **14.3**

Decreases the conversion to  
moderate/severe condition  
when COVID-19 positive **10.9**

Others **1.0**



start offering vegetarian meals on their menus and vegetarian dishes no longer have the same flavors. In the past, vegetarian food was often very salty and greasy and solely consisted of processed ingredients. Presently, businesses are committed to developing healthy and delicious vegetarian meals to cater to the palates of vegetarians and attract a rising number of customers. A large number of convenience stores and restaurants have jumped on the bandwagon of vegetarianism. During the pandemic, a significant number of people learned how to cook Michelin-grade vegetarian dishes at home from Youtube or other social media platform.

### **Culinary Delicacies at the Yi Te Reunion Event Earn Praise – Weight Loss and Body Slimming as an Appealing Option**

The results of the questionnaire survey clearly indicate that acceptance of vegetarian diets is widespread among nursing personnel. We therefore asked the respondents which vegetarian-promoting activities would attract them.

The top-ranked answer is “the Tzu Chi-Yi Te Reunion Event which featured vegetarian meals prepared by Yi Te Association Mums and Dads” (63.3%) followed by “vegetarian weight-loss course – restore your health and slim your figure” (27.5%), “21-day health challenge activity – plant-based lunch box menu designed by licensed nutritionists” (22.3%), and “cooking course taught by a renowned chef – learn how to prepare simple and tasty vegetarian meals” (21.9%). It is therefore obvious that in addition to the loving care of the Yi Te Mums and Dads, the Tzu Chi-Yi Te Reunion Event also featured vegetarian culinary delicacies that delighted the palates of the participating nursing personnel.

The percentage of respondents who are willing to demonstrate their own cooking skills is relatively low and it seems that most survey participants prefer ready-made meals, which don't require any effort on their part.

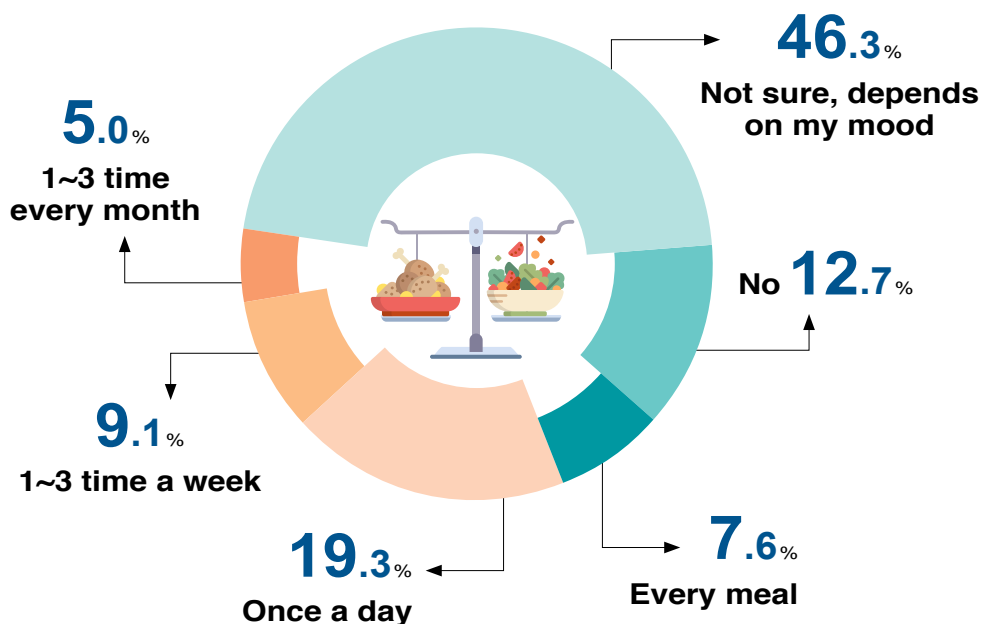
### **Promotion of Vegetarianism - Highly Attractive, Diversified Meal Options**

As the COVID-19 pandemic which has been ravaging the world for over two years continues unabated, Dharma Master Cheng Yen reminds us that vegetarianism which is actively promoted by Dalin Tzu Chi Hospital is the most effective epidemic prevention measure. The Hospital offers nutritious, healthy, and tasty vegetarian meals which are designed by licensed nutritionists. In line with the diversified dietary options available on the market, the nutritionists have created a wide range of meals including vegetarian Korean Army Stew, Italian pasta au gratin, pizza with bell peppers and white sauce au gratin, and vegetarian Taiwanese-style chicken nuggets. Whenever appetizing and mouth-

Q4

**In your experiences, how often you choose vegetarian-diet while out dining/order delivery?**

(N = 1,128)



watering new menus are announced in the hospital, staff discussions are centered around the meal options and long lines form inside the staff canteen. The kitchen personnel have their hands full on those days. This bears clear testimony to the attractiveness of vegetarian food.

Of course, such special treats are not available on all days. The nurses admit that they lack interest in the watery meals that frequently appear on the menu and prefer ordering takeout or delivery instead. The design of vegetarian meal options that cater to the food preferences of the staff members therefore poses a significant challenge for the nutritionists.

The aforementioned 21-day health challenge activity has been jointly promoted by Tzu Chi Hospital and local community volunteers. The feedback provided by the participating nurses shows that this activity not only enabled them to successfully reduce their weight it also normalized their metabolism values, improved their mental and physical well-being, and made them feel energized. Since the participants have maintained their vegetarian dietary habits after conclusion of the activity, they also tend to share their



Q5

## Which vegetarian-promoting activities would attract your participation?

( N = 1,128, multi-choices )

**Tzu Chi-Yi Te Reunion Event which featured vegetarian meals prepared by Yi Te Association Mums and Dads 63.3%**

**Vegetarian weight-loss course 27.5%**

**21-day health challenge activity – plant-based lunch box menu designed by licensed nutritionists 22.3%**

**Cooking course taught by a renowned chef – learn how to prepare simple and tasty vegetarian meals 21.9%**

**Hospital held competition to show my cooking skills 8.0%**

**Others 6.8%**

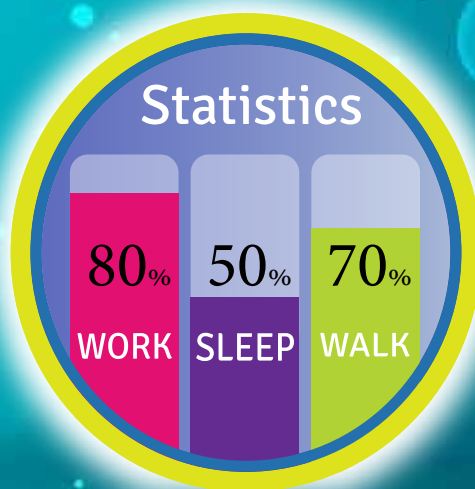


insights and experiences with their family members, colleagues, and friends and thereby encourage them to become vegetarians. By promoting the benefits of vegetarian diets and practicing what they preach, they not only help themselves but also make a valid contribution to purifying our planet. In conclusion, the easiest way to become a healthy vegetarian is to increase one's fruit and vegetable intake, reduce one's meat consumption, and gradually progress toward consuming vegetarian meals three to four days a week or on a daily basis. Let's all adopt a healthy vegetarian diet!

### References

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# Apps as Valuable Healthcare Helpers





**Experiences in the Application  
of Mobile Health Management Apps  
by Tzu Chi Nurses**



**By Chao Shu-Mei, Assistant Professor & Pan Chao-Kuei, Lecturer,  
Department of Nursing, Tzu Chi University of Science and Technology**

Food Panda and Uber Eats scooters racing through streets and narrow alleys to make their deliveries has been a common sight in recent years. Nowadays, smartphone apps fulfill a variety of purposes ranging from ordering meals and mobile shopping to mobile bank transfers, making lives smarter and more convenient. Health management related app(s) and associated mobile devices are constantly emerging. In addition,

## Basic Statistics

Gender	Number of People	%
Female	1,079	94.2
Male	67	5.8
Total	1,146	100.0
Age	Number of People	%
under 20	3	0.2
21~25	309	27.0
26~30	246	21.5
31~35	143	12.5
36~40	126	11.0
above 40	319	27.8
Total	1,146	100.0
Department	Number of People	%
Internal Medicine	221	19.3
Surgery	148	12.9
Pediatrics	30	2.6
Obstetrics & Gynecology	47	4.1
Intensive Care & ER	233	20.3
Functional Unit	20	1.8
Kidney Dialysis	44	3.8
Operating Room	68	5.9
Outpatient Clinic	195	17.0
Palliative Care	23	2.0
Administration	25	2.2
Psychiatry	34	3.0
Others	58	5.1
Total	1,146	100.0



many people have replaced their wrist watches with smart bracelets. We therefore strive to explore how nursing personnel with medical expertise utilize App(s) or mobile devices for health management.

In this issue, the editorial team of the Department of Nursing, Tzu Chi University of Science and Technology investigates Health Management App usage experiences of clinical nurses with the nursing personnel of seven Tzu Chi hospitals as the sample for this study. The goal lies in the development of mobile Health Management Apps for different chronic diseases to facilitate the work of nursing personnel by harnessing technology and assist patients in health maintenance and promotion.

Years worked in the hospital	Number of People	%
under 1	123	10.7
1.1~2	134	11.7
2.1~3	89	7.8
3.1~5	174	15.2
above 5	626	54.6
Total	1,146	100.0
Job Title	Number of People	%
Registered nurse	884	77.1
Deputy head nurse	48	4.2
Head nurse	52	4.5
Supervisor and above	18	1.6
Case manager / functional unit	54	4.7
Nurse Practitioner / senior RN	90	7.9
Total	1,146	100.0
Hospital	Number of People	%
Hualien	233	20.3
Yuli	31	2.7
Kuanshan	26	2.3
Dalin(including Chiayi)	267	23.3
Taipei	266	23.2
Taichung	298	26.0
Douliu	25	2.2
Total	1,146	100.0



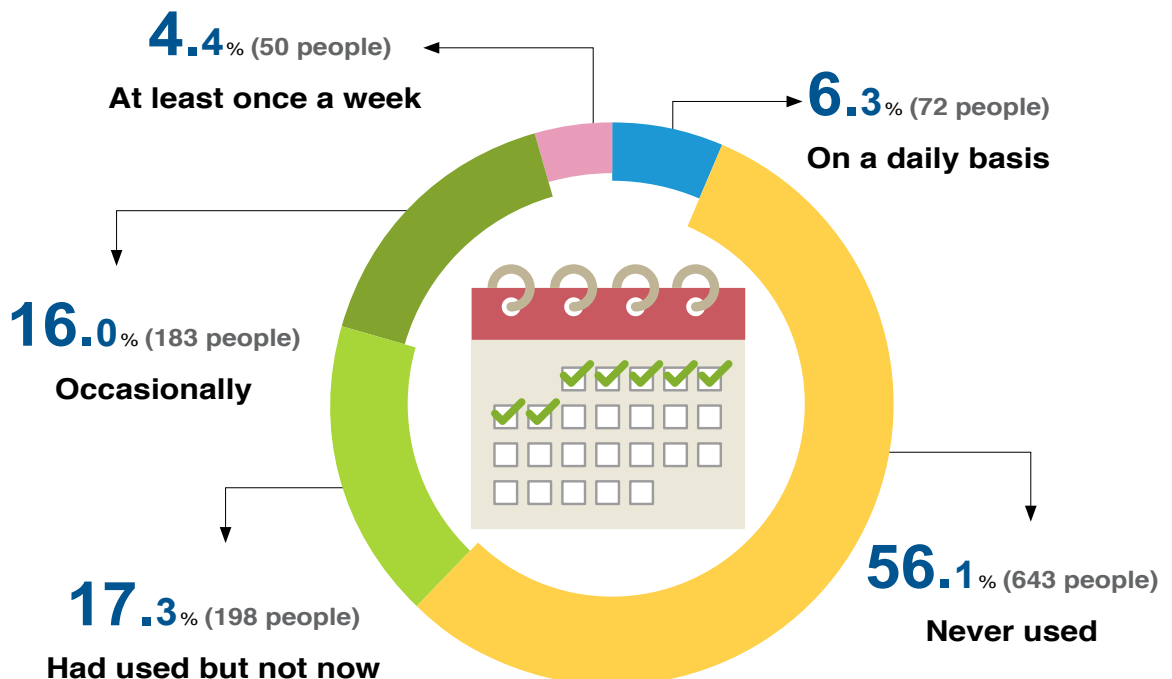
The term “Health Management App(s)” is defined as built-in health/disease care apps on mobile devices such as smartphones, tablets, or wireless devices utilized for the collection, analysis, and sharing of health-related data with the goal of facilitating personal health status management and enhancing the overall quality of the care provided by healthcare personnel.

After distribution of e-questionnaires to the respondents, a total of 1,146 valid questionnaires were returned.

Q1

### How often you use Health Management Apps?

( N = 1,146)



40% of the respondents have experience using Health Management Apps – Around 10% are active users

44.0% of the surveyed nurses state that they have used or are currently using Health Management Apps. Active users, who use such apps at least once a week or on a daily basis, account for 10.7%.

“Recording of menstrual periods”, “daily exercise record”, and “detection and recording of heart rates” are the three most popular functions among the respondents who have experience using such apps with selection rates of 46.9%, 45.9%, and 41.0%, respectively. “Detection and recording of weight” and “daily sleep record” were selected by 35.7% and 29.8% of the respondents, respectively.

The fact that all of the listed functions (a total of 14 items) were selected by different respondents is a clear indicator for personalized needs. In the open-ended “others” option, some survey participants stated that they use such apps to record their daily step count. The most frequently mentioned function was recording or query of COVID-19 related information such as vaccinations, rapid tests, and positive tests. Some respondents stated that they use Health Management Apps as a tool for the provision of health education to patients.

### **Ideal for Exercise Reminders and a Smart Grasp of Menstrual Periods and Sleep Regimens**

“Reminder of insufficient exercise and exhortation to engage in exercise” and “clear understanding of menstrual periods as a guideline for pregnancy or contraception” were rated as the most helpful functions of such Apps by 51.1% and 37.4% of the respondents, respectively. The third-ranked item was “adjustment of sleep habit or patterns” (27.2%) followed by “reminder of insufficient water intake” (22.0%) and “emotional adjustment and stress release to achieve mental balance” (20.0%). These four functions reflect the health problems most commonly encountered by clinical nurses.

As for the tracking of menstrual periods, the survey sample mostly consists of women in their childbearing years. Most clinical nurses work in shifts, which can result in irregular periods. Recording of relevant information including menstruation days, calculated cycles, reminders of expected ovulation days, arrival of menstruation, and safety period of the menstrual cycle, is therefore of vital importance for the planning of pregnancy or contraception. In addition, nurses wearing white uniforms at work or



Q2

## Which function(s) of Health Management Apps are most important in your daily life?

(N = 305, 6 choices at most)

Detection and recording of heart rates **41.0%**

Detection and recording of blood pressure **12.8%**

Detection and recording of blood sugar **6.6%**

Detection and recording of blood oxygen saturation **13.4%**

Detection and recording of weight **35.7%**

Daily exercise record **45.9%**

Daily diet record & calorie calculation **9.2%**

Daily water intake **10.8%**

Daily sleep record **29.8%**

Physical & mental conditions record **9.8%**

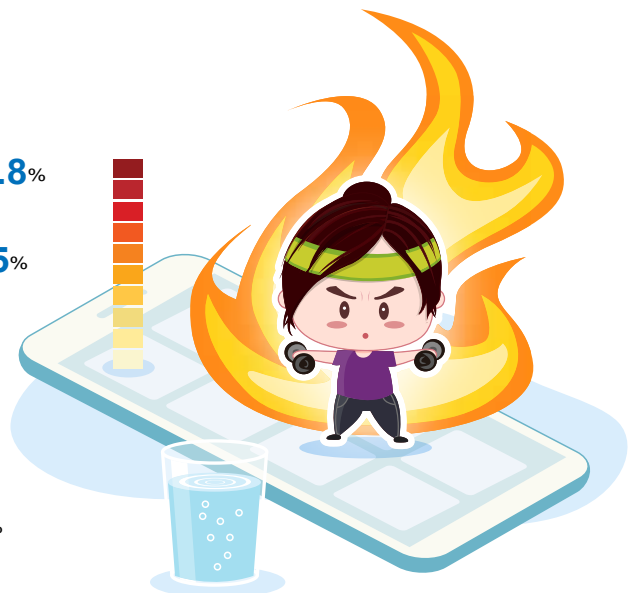
Record personal medication status **8.5%**

Health condition analysis **10.5%**

Reminders (exercise time, etc.) **7.5%**

Recording of menstrual periods **46.9%**

Others **4.9%**





# Q3

## Benefits of the Health Management App(s) to you?

( N = 305, multi-choices )



**51.1%** Reminder of insufficient exercise and exhortation to engage in exercise

**17.0%** Paying attention to calorie intake, eating less delicate cakes and desserts, etc.

**12.8%** Not drinking too many sugary drinks

**22.0%** Reminder of insufficient water intake



**20.0%** Emotional adjustment and stress release to achieve mental balance

**27.2%** Adjustment of sleep habit or patterns

**6.2%** Remember to take medicine on time

**37.4%** Clear understanding of menstrual periods as a guideline for pregnancy or contraception



**57.4%** Others

engaging in outdoor activities or trips can be caught off guard by their periods, which can cause great embarrassment if blood stains appear on their clothing. Regular recording of menstrual cycles facilitates the calculation of the period start date, which ensures mental preparedness and helps prevent predicaments.

These apps also facilitate adjustment of sleep routines. Nurses on rotating three-shift schedules frequently experience sleep disorders such as insomnia or shallow

Q4

## The Health Management App(s) you use?

( N = 305, multi-choices )

Apple Health App **48.2%**



Xiaomi App **31.5%**



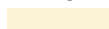
Dietary Management App **14.4%**



Water intake App **13.8%**



Sleep tracking App **9.5%**



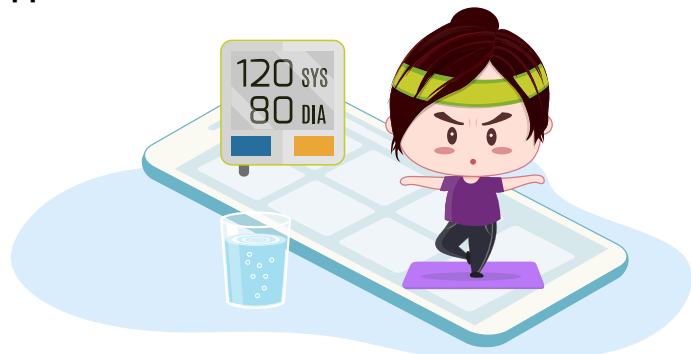
Daily Yoga App **4.9%**



Meditation/Mindfulness App **3.3%**



Others **14.8%**



sleep. Such disorders can be mitigated through sleep records created in Health Management Apps. Sleep aid functions of certain apps such as sounds of nature (forests or rivers) and white noise background music are highly conducive to relaxation, deep sleep, and enhancement of sleep quality.

“Reminders of insufficient water intake” is another extremely useful function. It is a well-known fact that RNs have very high workloads. In addition to caring for patients, they have to create countless records and accomplish a wide range of tasks. Their schedules are often so hectic that they have no time to eat, drink water, or go to the bathroom. A sufficient water intake is conducive to the discharge of metabolic waste and mitigation of fatigue. In the long run, an inadequate water intake has a detrimental impact on our health and well-being. Monitoring, recording, and reminders of water consumption therefore represent an essential feature of such apps.

It should be noted that 57.4% selected the “others” option, specifying a wide range of answers. Some respondents stated that they use these apps to record health-related data, while others use them in a more flexible manner (e.g., combination with game apps for exercise purposes). For instance, yoga course Apps feature virtual yoga instructors who assist in the planning of daily exercise patterns and times and provide guidance in workouts for rarely used muscles. Some yoga Apps even offer relaxing music.

As a matter of fact, the first choice of this question was “firm grasp of personal health status (e.g., heart rate, blood pressure, blood glucose, blood oxygen saturation, and weight), but it is not listed in the image since it was not selected by any respondent. We interpret this as follows: Nurses are generally young and therefore have no need for chronic disease management. Consequently, they don’t use these apps to maintain a firm grasp of their health status. Another possible explanation is that they regularly monitor their health status at the workplace.

The three most frequently used apps are the Apple Health App, the Xiaomi App, and the Dietary Management App in descending order. The Apple Health App and Xiaomi App are capable of long-term recording and monitoring of physiological conditions such as heart rates, blood pressure, sleep, and exercise. These apps are also among the most well-known mobile Health Management Apps available on the market. They offer an incentive and reward mechanism that encourages users to strengthen or maintain their current workout routine and motivates them to adopt health-promoting lifestyles.



### **Only 60% Are Willing to Recommend Specific Chronic Disease Management Apps**

It is evident from available data and statistics that certain hospitals and clinics have already designed chronic disease apps to facilitate disease management by patients. Relevant apps include Dalin Tzu Chi – Your Health LINE, Tri-Service General Hospital – Home Dialysis App, Kaohsiung Medical University Chung-Ho Memorial Hospital – iCKD, Veterans General Hospital Home Pharmacist App, Kaohsiung Veterans General Hospital – Integrated Radiation Oncology Information System of the Oncology Team, Changhua Christian Hospital- Joint Gestational Diabetes Mellitus (GDM) Cloud-based Care System. We further asked RNs who have experience using Health Management Apps whether they would recommend such apps to their patients while performing clinical tasks. 63.6% stated that they would, while 36.4% would select not to recommend such apps to their patients.

Judging from our work experience, it is apparent that all case managers wish they had a health management App to significantly raise the effectiveness of their case management tools.

### **The Time-Consuming Creation of Health Management Tools Can Help Save Time**

The final question aimed to determine the reasons why respondents currently don't use Health Management Apps ( N = 841 ). Close to a half (49.1%) claimed that they don't have enough time. The percentages for the remaining options were not very high. "Concerns about personal information leakage", "app functions don't meet my needs", "it is a hassle to use different apps to accomplish different tasks; I'm waiting for improved apps to become available", and "I have given up using these apps since they are not user-friendly enough" were selected by 16.9% , 14.0%, 13.4%, and 12.1%, respectively.

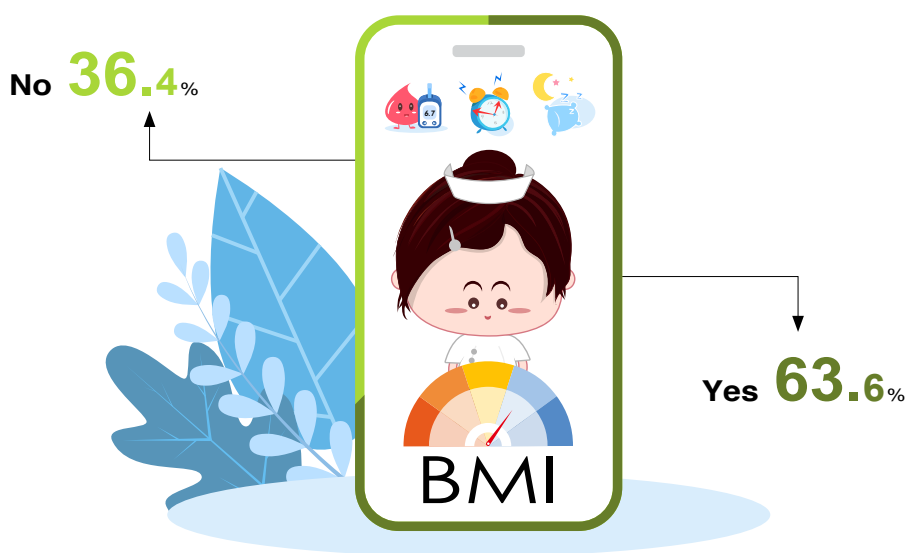
The fact that health-related apps require users to log in and necessitate the provision of basic user information could give rise to concerns about information leakage if the software development company provides insufficient privacy protection for remote network users, which ultimately affects the willingness to use the software. On top of that, scamming has become more and more rampant and the hacking of the LINE and Facebook accounts of friends and relatives is quite common.

In addition, negative user experiences and lack of user-friendliness result in nurses

Q5

**In clinical work, will you recommend patients to use disease-related Health Management APP?**

(ex. Dalin Tzu Chi - Your Health Doctor LINE, Tri-Service General Hospital - Home Dialysis APP, Gaoyi Shenhao - iCKD; Rong Zong Smart Home Little Pharmacist APP, Kaohsiung Veterans General Hospital-all cancer team swollen information integration system, etc.) ( N = 305 )



discontinuing the use of such apps. Other issues include the unavailability of the desired language, excessively complex menu functions and categories, or the necessity to enter data manually. The time-consuming process of learning app operations can cause difficulties and frustration for the hard-working nurses, which tends to result in app abandonment.

Miss Tsai, a RN who I met frequently these days during my teaching internship, is a typical representative of the results of this questionnaire survey.

Miss Tsai, who is in her early twenties, is so busy gaining clinical experience that she has no time to drink water and her menstrual cycle has become irregular. On top of that, she is currently preparing for her N3 clinical professional competence examination





## Q6

### Why you choose not to use Health Management APP?

( N = 841, 3 choices at most )

Have to pay for the App **7.8%**



Once used, feel inconvenient and abandoned **12.1%**



Worry about my personal data leakage **16.9%**



APP functions don't fit my needs **14.0%**



Smart phone/pad space not enough to download APP **5.2%**



Too young to manage my health **2.4%**



No integrated functions, waiting for better App(s) **13.4%**



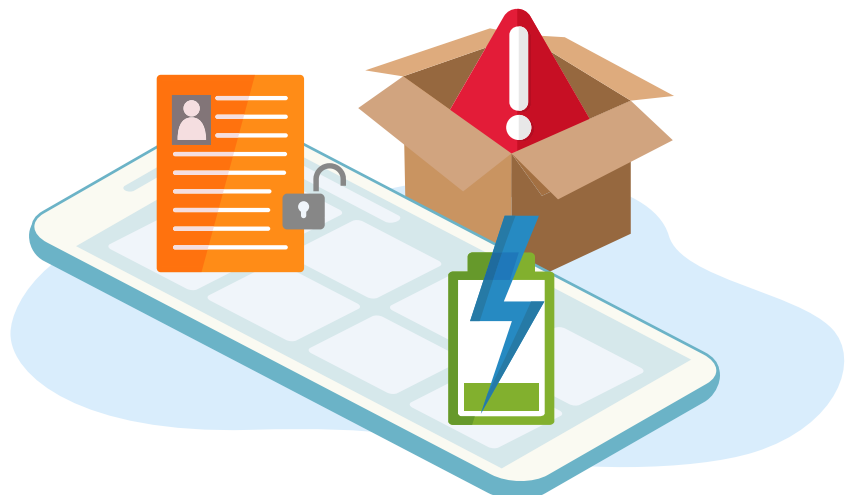
No time to use it **49.1%**



Electricity consuming **7.0%**



Others **10.9%**



and therefore has to search for and organize existing research literature for her case report. She is under a lot of pressure due to the pressing deadline. As a result, she suffers from sleep disorders such as insomnia and shallow sleep. Her ward colleagues have suggested that she give Health Management Apps a try. Since she cannot carry a smartphone with her at work, she decided to buy a smart wristband. She feels that the most useful functions are menstrual period and sleep tracking.

Miss Tsai points out that the sleep management feature of this App allows her to determine whether she has entered the core sleep stage. When the monitoring record reveals that she has accumulated too much “sleep debt”, the App reminds her to go to bed earlier. Her sleep quality has improved significantly due to this App, and her mood has stabilized too.

After realizing how useful this App is, she downloaded the Plant Nanny App from the App Store to track and record her water intake and set drink water reminders at intervals of several hours. Due to the cute interface design, she no longer forgets to drink water, which makes the plants on the interface appear healthy. Consequently, her physical well-being has improved considerably, which has given her a great sense of achievement.

### **The Future of Smart Health Management for Patients**

As researchers and clinical instructors in the field of renal disease management, our joint vision is to design an app tailored to the needs of chronic renal patients. However, patients will not be willing to use the app if RNs are reluctant to recommend it. It is therefore of paramount importance to gain the approval of RNs.

Despite the fact that the majority of chronic patients are seniors, it is very likely that they will enjoy using the app if the interface is simplified and user-friendly since this cohort is also becoming more and more smartphone literate.

Since clinical personnel are very close to their patients, they have the best understanding of their symptoms and health needs. When enlisting information engineering experts for the design and development of apps for different diseases, the clinical experience of medical teams is crucial. The participation of physicians and RNs in the core design process is therefore a key prerequisite for the successful development of an app that perfectly fits the needs of patients.

In this era of ubiquitous smartphone and Internet use, Health Management Apps greatly facilitate the maintenance of perfect health and well-being. As far as chronic

patients are concerned, mobile Health Management Apps represent a human-centered and user-oriented healthcare service.

The design and development of disease management software is based on the core concept of a patient- and family-centered health care system. Digital and mobile information services provide patients with disease-related knowledge and facilitate the monitoring of physiological data, real-time communication with professional caregivers, and effective health maintenance.

They are capable of providing and exchanging information in all healthcare fields and raise the level of participation of patients, families, and communities in disease management, which results in enhanced timeliness and effectiveness of disease diagnosis, monitoring, and management.

Such services have already been applied in diabetes, hypertension, stroke, and asthma patients. They enable users (patients and family members) to obtain disease- and health-related information, monitor and report their physiological health status in a real-time manner, and enhance their knowledge, skills, and competence in the field of self-disease management. They also provide valuable support for clinical decision



**Tzu Chi University of Science & Technology Nursing School designs tutoring apps. Photo shows the interface & process of Pediatric Nursing.**



making, drug management and administration, risk screening, and rehabilitation in addition to fostering communication between healthcare professionals and patients.

Furthermore, they improve the quality and expand the scope of provided care with the ultimate goal of mitigating and deferring disease severity and facilitating early detection of deteriorating physical conditions. Finally, they encourage positive lifestyle changes and serve as powerful tools for improved chronic disease management. We eagerly anticipate the availability of various apps that help chronic patients prolong their lives and maintain their health.



**The teacher (left) and nursing students using the app in the class.**

A photograph of a woman, Chung May-Jing, standing in a hospital corridor. She is wearing a white short-sleeved shirt under a dark blue nurse's vest, and a white nurse's cap with a blue band. Her hands are clasped in front of her. The background is a blurred hospital hallway with other staff and equipment.

# **A Naughty Kid Turned Into a Strong Back-Up**

**Chung May-Jing,**

**Deputy Head Nurse of 11A Ward,  
Dalin Tzu Chi Hospital**

Article by Lin Shih-Chun



“When Furry was a little kid, if she saw a hole she would always put her hands into the hole to find some ‘treasures’. The treasures that she found included geckos, spiders, even cockroaches, and then she happily gave them to her sisters. She would frequently hear screams to “let them go, let them go!” Her sisters were all scared. They knew Furry was too young and didn’t understand why they were scared, so they gave her 5 dollars to get ice cream to divert her attention. Then the holes in her entire house were all sealed. This kid was not afraid of the insects and was curious about everything . No one would have imagined that this little girl Furry would grow up to become a professional nurse Chung May-Jing.

### **Gave Up the Dream of Sea Travelling, Chose the Steady Nursing Profession**

Living in the Tayuan countryside of Taoyuan, not far from the seashore, she was yearning for a life centering on ocean activities. Prior to graduation from middle school, she heard that being a voyager would earn her millions in salary and offer her adventures in the ocean. Thus her mind was settled to go to the School of Navigation of Kaohsiung. She first tested this intention with her family members. However, her parents and grandma were very worried that May-Jing might be swallowed by the ocean, due to her curiosity and impulsive character.

Knowing her family’s concerns, May-Jing then gave up her dream to pursue a career in the sea, and instead chose a nursing career, deciding to attend a nearby 5 year medical college after her graduation from middle school.

Growing up in a big family, May-Jing was the youngest one among brothers, sisters, and cousins. She always respected them and understood the financial situation of the family. When she received the registration fee from the Nursing School, she realized that the 50,000 dollars was more than the total of her three sisters’ tuitions. She was shocked and told herself, “I will study hard and I will not waste my parents’ money.”

“Even though I am not sure what I want to do, I will learn as much I can. I can then decide what I want to do and seek what I like to do.” During the 5 years she spent in the Nursing School, Mai-Jing discovered the mystery of the human body, experienced contentment during the internship training, and received praise from teachers; thus her school experience was very smooth, perhaps remindful of fish in the water.





### **Fake It Until You Make It, Relationship with Tzu Chi**

After May-Jing graduated from the 5 year Nursing School, she decided to continue her study at the 2-year Nursing Degree at Tzu Chi University of Science & Technology (TCUST). The reason for her interest was because of one lesson from a psychology teacher. The teacher liked Master Cheng Yen and the Jing Si Aphorisms. In order to get the students' attention, the teacher mimicked Master Cheng in a joking way, saying: "Being a human, one should pretend...." The class laughed out loud, but the point was: "Pretend and if you do so long enough, then it will become true." This Aphorism was deeply inscribed in May-Jing's heart and she really agreed with the philosophy. It reminded her that when she first studied nursing, she pretended she was really great, but then it became true in the end.

Because of her curiosity toward Master Cheng Yen and the culture of Tzu Chi, May-Jing entered the 2-year foundation-financed scholarship. During the two-year stay at Hualien in TCUST, her family was pleased with May-Jing's personal changes. May-Jing became more mature, with a softer temperament and personality.

Her internship went well, so she decided to join Dalin Tzu Chi hospital and was assigned to Ward 11A. May-Jing settled down at this last stop of her internship.

### **Paying Back Scholarship Practice**

After entering her practice and operating independently in the field, May-Jing wanted to prove her ability. She set her efficiency target as first priority, and worked tediously, without distraction, to follow her own schedule. This work ethic seemed to distance herself from other people in her social life. She forgot why she went into the nursing field and just wanted to go through these two years to be qualified for free tuition without paying it back, and then she could go back to Taiyuan.

Ward 11A was primarily caring for older patients; "Aging, Illness, and Death" are the normal conditions there. Even though May-Jiang tried to treat this as a routine job, she still felt the patients' pain. She felt nursing duty was very tiresome and was thinking of leaving Da-Lin after two years. Then she started reflecting: "If one day, when I am sick like the patients lying in the bed, will I be sorry when I recall my work here? When I cannot move, will I miss the time I could move? When I am dead, would I feel sorry and regret what I have done?"

May-Jing asked herself these three questions and concluded that she should continue in the nursing profession. She realized that she was fortunate to have work such as she did.



After two years of clearing financial support, through training and practice, May-Jiang decided to remain at the same unit. It's been almost ten years now since she decided to stay.

### **Funny but Calm, a Good Friend Who Cares About Friendship**

The person who had master-student love with May-Jing was the head nurse – Chen Li-Yu, who said: “I also had just taken over the Ward 11A, and May-Jing gave me the impression that she was quirky and interesting; often she said something amazing



and the whole team was laughing over her jokes. Sometimes, clinically there would be many cases that caused depression and anger amongst her colleagues, but May-Jing's different point of view often inspired them or helped them in a positive sense." The head nurse said that as long as May-Jing was around, there was a positive atmosphere.

"Also, May-Jing is very gentle and appreciates the friendship, whenever someone was depressed, she wouldn't be joking around but she listened attentively. Whenever someone needed help, she would always be the first one to offer help," Chen Li-Yu said. "When, one time, the younger nurse had a broken leg because of riding a motorcycle on a slippery rainy road, she was worrying that no one could take care of her because she lived alone. So May-Jing invited her to live with her and took care of her for two months until she was fully recovered". The head nurse Liyu was very impressed and thought she could be a manager in the future.

### **Family Medical Advisor and Accompanying Her Grandma's Final Days**

In 2020, May-Jing took the assignment as deputy head nurse and as an understudy from the head nurse Liyu to unload some of Liyu's administrative responsibilities. This was supposed to be a very promising opportunity, but it was May-Jing's most difficult year.

May-Jing's grandma, who took care of her since she was little, was frequently hospitalized during this time. Thus May-Jing was afraid to receive phone calls from family members about grandma's condition. There were twenty some members in the family, who would keep on calling her for consultations. As soon as she finished explaining, another phone call would come. If she couldn't solve the situation, she had to take the high speed railway back to Taoyuan. She felt sad but didn't complain at all.

Grandma was her primary caregiver when May-Jing was small; her parents were busy at work, so she slept with grandma. But she was really naughty, and caused a lot of troubles in the neighborhood. For example, she cooked stolen yams from other people's kiln, and played firecrackers that burned other's vegetable patches. Grandma had to sometimes apologize to the neighbors. Often one could hear neighbor's yelling: "Older Mrs. Lin, your Furry fell into the smelly ditch." Grandma had to put down whatever she was doing and ran to the ditch and brought her back to bathe her. In May-Jing's memory, grandma never scolded her for her naughty behavior, but always tried to guide her with good advice. May-Jing remembered that whenever she was



**Since Chung May-Jing took over the managerial duties, she led the team and went through challenges and grew up together with team.**



sick with high fever, she could hear the noise from the kitchen because grandma was making herbs for her. She really wanted to do more to help grandma and make her more comfortable. She didn't mind her own physical fatigue.

### **The Challenge of Being in Charge, Growing up with the Team**

2020 was a challenging year for May-Jing; there were many changes during that year. At the beginning of 2020, she lost grandma, and then the corona virus pandemic happened. She faced a crisis at work and the loss of grandma. In August she was promoted to be responsible for the geriatric hospitalization activities for Ward 11A. All of these were large challenges for May-Jing.

During the years of being in charge of the geriatric business, she saw many different situations and challenges, and gained a lot of experience. Although she was an acting deputy head nurse, she performed all the responsibilities of a head nurse. At first, she felt stressed. She appreciated the support of the team, including the head nurse, the directors of two wards, and her colleagues, and she was able to accomplish all the tasks. She said, "I feel really lucky, I am not alone and helpless, the whole team is like a family supporting each other."





The colleague Nierong was only one year younger than May-Jing and she highly respected May-Jing. Nierong said: “Sometimes when the patient or family members were too emotional, or when the patient’s condition worsened and required emergency treatments, we often were very worried and didn’t know what to do, but May-Jing always calmly managed the issues and prioritized the situations. We asked May-Jing afterwards, she said she was also nervous. However, she had to set aside the emotional reaction, and managed the issues. Her steadiness and good attitude were appreciated and admirable and we should learn from her.” Nierong shared that May-Jing would always help the staff understand the situation: “Nursing business should not be alone, it’s a team effort. We need to be able to help and support each other and seek help when it’s necessary.”

When the COVID-19 pandemic happened, it actually tested May-Jing's ability as a new manager. She demonstrated her competency on the job. In the professional area, she shared and grew with the colleagues. In the past two years, the unit employed QCC methods to improve the quality of medical treatments, participated in the discussions on medical strategies, and received great results. In their daily routine, when the colleagues were too busy to eat, May-Jing would prepare drinks, snacks, and lunches to ease the personnel shortage and share the burden among the team. This circle of love atmosphere positively affected the teamwork, and led to a high quality of positivity within the team.

### **Extend Her Love for Grandma; She Becomes a Backbone for Elderly Patients**

The younger nurses were curious as to why May-Jing would spend a lot of time listening to family members?

May-Jing shared her experience: "A lot of our patients are living alone and taking care of each other. Their children are all working far away and can't take care of them. If we don't spend time talking with them to establish trust, we wouldn't be able to understand their needs. If we can't prepare them before they leave the hospital, then they may come back to the hospital with the same problems." May-Jing hoped that the team would be able to provide good care to the elders, especially in the areas of high density of elder patients. She wished to help them stay in their home towns.

There is always stress in the nursing business, how did May-Jing cope with it? She said that whenever she felt stressful she would listen to music by herself and calm herself. Then she could see things clearly. She described music as being like the scissors used by the beautician; it could change her mood and smooth any disturbance that she experienced.

She recalled that in her own life, she really appreciated the path that led her to know Tzu Chi. She said: "In nursing school, they not only trained us in the professional field, they also taught us how to demonstrate filial piety and how to be kind to others, how to be appreciative toward life, and how to handle the nursing tasks." She felt the warmth she experienced in school helped her practice in nursing and helped her appreciate each patient who she cared for. She is willing to extend the love she felt toward her grandma to all the patients she cared for.





# The Joy Radiates from Within

**By Zen Wei-Chuan, Deputy Head Nurse for the Surgical ICU, Dalin Tzu Chi Hospital**

I came to Dalin Tzu Chi hospital in 2013 and since then I worked in the ICU for the surgical unit. Back then, the hospital hall was always filled with people visiting. Wherever you went, you could see volunteers from Tzu Chi.

This was also true in the Surgical ICU unit. In this unit, every morning after the shift change, we had many nursing tasks, such as changing wounds dressing, dispensing medicine, tube-feeding, or turning patients. I would be busy doing these tasks and showing no emotion, until the Tzu Chi volunteers greeted me with, “Ms. Nurse, good morning!” Then I would reply with a smile and no longer felt I was showing a stony face.

Not only would Tzu Chi volunteers in the ICU accompany the patients, and calm the patient’s family, they would also be good helpers for the nurses. Typically, they made milk from milk powder, fed the patients, helped visitors to put-on protective gowns, etc. They also kindly reminded us to drink, “Nurse, don’t forget to drink water.” “Nurse, have you eaten yet, remember to eat.” It always gave everyone a warm feeling.

Since the outbreak of the COVID-19 pandemic, we have gone two years without seeing Tzu Chi volunteers, such as Tzu-Cheng Dads and Yi-Te Moms, and other volunteers. We found our jobs stressful without their presence. Everyone was feeling anxiety. We were lucky to still have the Tzu Chi Cultural Team members Yinyin and Bi-Jen continue to show concern and support us. The ways they showed their support were by making mung bean soup, or purple rice red bean soups, or a hot herbal tea that would help us stay protected from the pandemic, and then by putting the foods and drinks on our meeting table.

One of the reasons that I came from Taoyuan to Chiayi Dalin Tzu Chi Hospital was because I heard a familiar Tzu Chi volunteer uncle say: “Dalin Tzu Chi is a humanity-based hospital. The simple humane touch culture is felt at Dalin Tzu Chi Hospital. Since I came to work for Dalin Tzu Chi Hospital, I looked forward to seeing those Tzu Chi parents visiting us more than on pay-day or on New Year’s Eve. They all came from different areas; some even came from as far away as Little Liuqiu Island by boat. They always brought tons of vegetarian cuisines, prepared with love. Even non-vegans also



loved the food, and also celebrated their colleagues' birthday."

Tzu Chi moms and dads couldn't come to hospital to visit us, but we could meet with each other through the video conferences. Sometimes they would screen shot our morning video conferences. The screen would show that we were sharing our experience in the nursing field. The message said "We could see our children are sharing in the meeting." They would mail biscuits and seasonal fruits to us, and said "Although we can't meet with you and cook the hot food for you, we still hope that you can see us during the pandemic and we send you our love and care." We felt so lucky!

In this pandemic, we still have a long way to go. I learned from the volunteers and Tzu Chi parents to always smile to radiate the happiness deep from my heart. No matter what happens, I would always treasure this fate and I do my best to devote my talent and energy to repay the love I received from the Tzu Chi family. I also wish Tzu Chi volunteers and Tzu Chi parents to be safe and healthy. Hopefully the pandemic will soon be over and we look forward to meeting them again.

# Mutually Supportive Partners Dressed in White

**By Liao Chia-Lin,**

**Attending surgeon of the Department of Neurosurgery, Hualien Tzu Chi Hospital**



Frankly speaking, I don't like to wear my white doctor's coat. As a resident doctor, I frequently switched between casual attire and my short white coat. However, after becoming an attending physician, I had to start donning a white coat to ensure I would be recognized as a doctor by the patients and their family members. This perceptibly increased the burden on my shoulders, but it has also helped me assimilate into the hospital environment characterized by this all-white dress code. I firmly believe that the changing times have resulted in a gradual transformation of the traditional top-down relationship between doctors and nurses. This hierarchical relationship has been replaced with a more collegial style characterized by egalitarian collaboration in the field of patient care. Anyhow, from my perspective as a medical practitioner who received his whole practical training from the clerkship and internship period to the acquisition of the professional license at Hualien Tzu Chi Hospital, my interactions with RNs I am well acquainted with have given me a "sense of the times."





My mindset in my interactions with RNs dressed in white has evolved considerably during my transition from clerk to attending physician. I still have a fresh memory of my first encounter with a novice SICU RN in my first month as a clerk. Despite the fact that we were both newcomers (I was even a bit older than her), I asked for her help cheekily: “Big Sister, what should I do know?” “Don’t call me Big Sister!” she replied brusquely. I still frequently run into this nurse during my ward rounds. We have both turned into seasoned veterans, but that first encounter still pops up in my mind whenever I see her. I think she probably doesn’t remember this little incident, which is a good thing since it was really awkward and embarrassing.

It was only after I became an intern and later a PGY (Post-Graduate Year) Resident that I finally turned into a slightly useful colleague in the eyes of the experienced angels in white. During this period, I socialized and mingled with the RNs of all units. At lunch time, someone would always call to ask if I wanted a bento box. During night shift, we had to treat a staggering number of people and jointly restrain restless patients who were trying to pull out their nasogastric tubes and urinary catheters. During our errands, we always found time to exchange hellos and gradually developed a spirit of camaraderie. In hindsight, I think that this period closely approximates the daily work routine of nursing personnel except for arrogant and aloof staff members. The interactions of RNs at this stage also offer a glimpse on whether they will be attentive to their patients and their needs or whether they will be blacklisted by their colleagues in the future.

Later on, as a resident physician, I was up to my neck in work, and everyone became irritable and short-tempered. The physicians who continued treating their RNs nicely often turned into the Mr. Congenialities of their departments. Despite my gradually increasing competence, I would still blow my top when novice nurses did inexplicable things. For instance, making phone calls on duty to ask silly questions like “Doctor, the patient’s systolic pressure is at 106, does he still have to take his hypertension pill at 9:00 pm?”, when it was clearly specified on the physician order that drug administration was not necessary if systolic pressure fell below 110. However, I came to the conclusion that it was most important to explain to such newcomers who assisted me in taking care of the patients why such questions were absurd instead of blowing up at them no matter how upset I was. Physicians are not always right either. Maybe they scored higher on the SAT, but if they don’t apply themselves to their clinical training and patient care, they are looked down upon by their co-workers. I recall an older fellow student of mine being questioned by a senior RN, who still works at the hospital. Actually, she gave him a dressing down. I therefore always have great respect for these precious angels in white.

Now that I’m an attending physician, my perspective has changed again. This is embarrassing to admit, but when RNs see that my doctor’s coat is longer now, they seem to be showing me a bit more respect. That being said, that former feeling of camaraderie is gone, but maybe this is just part of the process. Now that I’m fully responsible for my patients, stress is mounting.

However, the RNs spend much more time with the patients than I do. Despite the fact that I make all the clinical decisions, the nurses resemble the axons and dendrites of neurons. Without their communication of instructions and feedback, I wouldn't be able to effectively care for my patients. Everything would be empty talk without their dedicated efforts. Every single RN on duty assists me in meeting my patients' care needs and expectations. Every





feedback can be a turning point in the patient's condition and clinical decision making (CDM), and a small act or explanation by a RN can shield a "white coat" from legal indictment.

My final observation is that in this age of name rectification, both "White Coats and Angels in White" pursue their own values. Regardless of who wears these white coats or uniforms, we ultimately need each other's support. Maybe we can't change certain stereotypes, but we are all assembled in this space for the sake of our patients, families, and livelihoods. Perhaps we can't all be friends, but we must become partners dressed in white.