

## QUALITY ENGINEERING AND COMPLEMENTARY THERAPIES

**Mihai-Victor Zerbes**, *Assist. Professor Eng. PhD, “Lucian Blaga” University of Sibiu, Sibiu, ROMANIA*

**Vasilica Silvia Neamu**, *Assistant nutritionist, SC Ganesha SRL, Sibiu, ROMANIA*

**ABSTRACT:** *In this paper the authors based on their passion for dietotherapy propose a methodology for improvement the personal counselling process of clients eager to improve their health. The methodology is based on a number of specific instruments of quality engineering, tools that are used with success especially in industrial organizations. Using this methodology has produced the expected results in most cases in which it was used.*

**KEY WORDS:** improving, diet, quality tools, personal counselling

### 1. INTRODUCTION

We chose to talk about this topic because we are followers of natural medicine and, hence, of the complementary therapies. So, we believe that is necessary to present, briefly, a part of our preoccupation.

First of all, here in introduction, we present some definition about the complementary therapies, especially, about dietotherapy. And, because the first author is a quality engineer we will talk about processes improvements tools. Then make a fusion between these two concepts. We present this in our case study.

#### 1.1. The complementary therapies

The complementary therapies include a range of diagnostic and treatment methods that complement conventional medicine [3]. Some clients, because patients cannot be named as long as the therapist is not a doctor, choose in totality the naturist way. One of the main motivations for they doing this would be that most of these therapies have a history of hundreds or even thousands of years.

The main diagnostic methods used by therapists include: iridology, magnetic biofeedback, pulsology, study skin appearance, appearance of excreta, study of appetites and so on [1].

The therapies applied in this system, in order to improve disease are apitherapy, dietotherapy, phytoptherapy, hirudotherapy, ultrasound therapy, sacrotherapy and more.

We must mention that there is criticism from advocates of conventional medicine doctors. They claim that these therapies and treatments have not been tested by scientific methods and therefore are not scientifically documented.

#### 1.2. Dietotherapy

Dietotherapy is a method of treatment based on a balanced diet [5].

Dietotherapy use the foods nutrients to prevent diseases or to fight against them, restoring its natural balance of the body.

It starts from the idea that a deficiency of vitamins and minerals that are rarely observed in a clinical examination is the origin of many diseases.

### 1.3. Processes improvements tools

The improving refers to actions taken to increase efficiency and effectiveness of processes in order to improve product quality / services, having as ultimate objective the customer satisfaction in order to obtain profit [2]. Thus emerged over time a series of man-made methods to optimize process improvement. Of these we present some of the most used methods: APQP method, FMECA method, six-sigma methodology, 8D method and so on.

## 2. THE CASE STUDY

The idea came from a real case, in which passed first author. After this experience he chose the dietotherapy. So was born the interest for this area especially that this version of therapy has yielded results above expectations. Following these events, the author discovered similarities between his concern for improving organizational

processes (the field in which he operates the current teaching and research activities) and the improvement of health. Later was born collaboration with co-author of this article from which we collected the data used in this case study. In this case study is about a client with gallstones and about the strategy used in the process of personal counselling.

In this process we inserted a series of tools specific to the domain of improving organizational processes and so we created a method designed to facilitate and streamline the process of counselling.

In fact, all began when the co-author of this article had a large number of customers and a relatively short time to interact with them and to assess and deliver an answer as correct, complex, fully and in a timely. Knowing the work of first author turned to his help.

After identifying how co-author working, together we created a questionnaire to determine the current state of health of clients.

Table 1 presents the questionnaire completed by a client with gallstones.

**Table 1.** The questionnaire [4] [6]

The parameter	Standard value	Client Name	
		Response	Objective
Gender	-	F	-
Age	-	42	-
Provenience environment	-	Urban	Rural
Profession	-	Engineer	Trainer
Position	-	Designer engineer	Motivational speaker
Weight (kg)	-	87	63
Height (cm)	-	161	-
The body mass index	-	33,6	24
Total cholesterol mg/dL	200-240	192,7	210
Glycaemia mg/dL	70-125	131	110
Health status	excellent	bad	Very good
Physical activity, min. 30'/day	7 day/week	5	7
Exercises to increase muscle strength	3 day/week	0	2
Sleeping	8h/day	6	7
Smoking	non-smoker	ex-smoker	Non-smoker
Passive smoking	no	no	No
Alcohol, 250 ml B/100 ml V/40 ml SD	no drinking	maximum 1 unit/zi	No drinking
Sex & safe sex	always	not always	Always
Breakfast, liquid or fruit	7	0	7
Bread/cereals, servings/day	3	6	3
Fruits and vegetables, min. servings/day	5	3	5
Nuts/seeds, servings/week	7	1	7
Leguminous plants	3	4	3
Food with high fat and cholesterol	1/month	daily	Rarely/ newer
Refined foods	1/month	daily	Rarely/ newer
Water	35ml/kg body	1	2.2

<b>Happiness</b>	happy enough	no too happy	<b>Happy enough</b>
<b>Stress</b>	rarely/newer	quite often	<b>Rarely/ newer</b>
<b>Family and friends support</b>	yes	no	<b>Yes</b>
<b>Social life</b>	yes	no	<b>Yes</b>
<b>Life in community</b>	yes	yes	<b>Yes</b>
<b>Spiritual life</b>	yes	minimal	<b>Yes</b>
<b>Seatbelt</b>	100%	75%	<b>100</b>
<b>Smoke detector alarm</b>	yes	no	<b>Yes</b>
<b>Safety helmet</b>	yes	yes	<b>Yes</b>
<b>Drunk driving</b>	no	no	<b>No</b>
<b>Preventive medical examinations</b>	yes	no	<b>Yes</b>
<b>Disposition/feelings</b>			
You were discouraged, depressed or desperate in the last month?	no	yes	<b>No</b>
Did decreased or disappeared interest in or pleasure from what you do in the last month?	no	yes	<b>No</b>
Negative feelings affect your ability to function normally in social or professional last month?	no	yes	<b>No</b>

After analysing questionnaire and discussions with the client to increase awareness of its

impact on own health condition we used as a tool, in this way, the fish bone diagram shown in Figure 1.

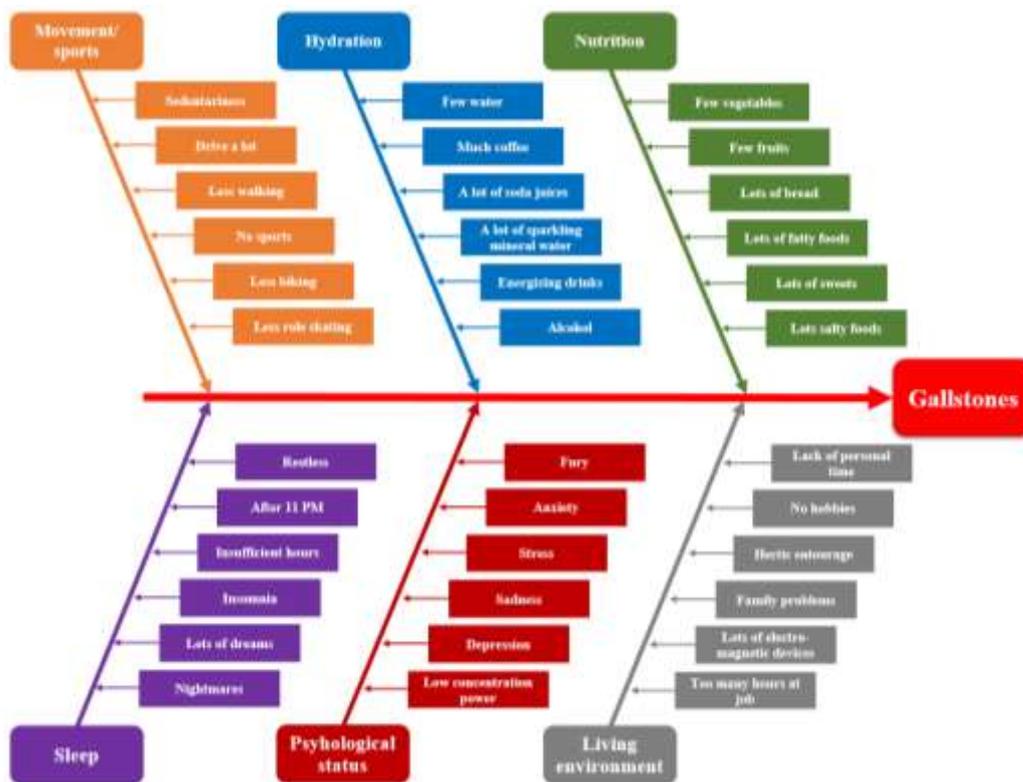


Figure 1. The fish bone diagram

Causes identified using this chart were the basis of creating a self-assessment form (Table 2) on that complements (approximately) it the therapist together with the client with the data from the last year.

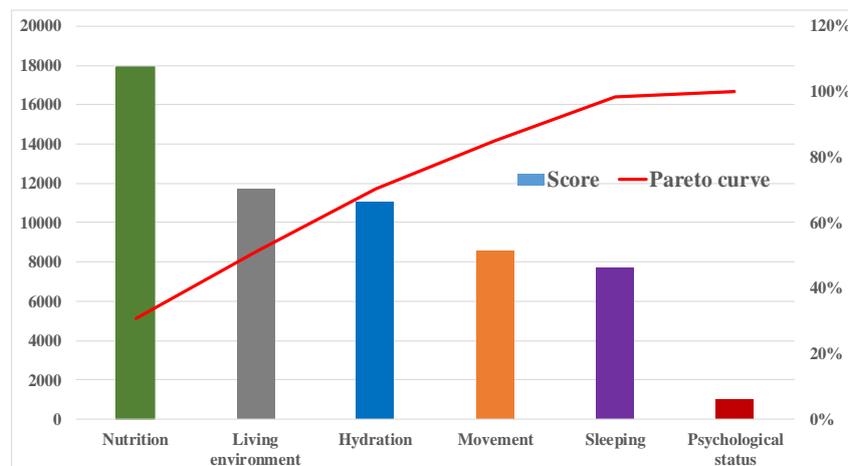
We mention that chart is automatically generated when filling a fish bone diagram. Also is automatically generated

(in time with filling in) the Pareto diagram (Figure 2), the chart that highlights the main causes with negative impact on health. For each cause was assigned a coefficient of importance (1 for least important, 3 for medium importance and 9 very important).

These were the basis for elaborating the strategy of therapy.

**Table 2.** The self-assessment form [4]

Group of causes	Cause	Frequency of occurrence
<b>Movement</b>	Sedentariness	335
	Drive a lot	300
	Less walking	285
	No sports	365
	Less biking	270
	Less role skating	240
	<b>Hydration</b>	Few water
Much coffee		365
A lot of soda juices		255
A lot of sparkling mineral water		270
Energizing drinks		75
Alcohol		120
<b>Nutrition</b>		Few vegetables
	Few fruits	285
	Lots of bread	365
	Lots of fatty food	365
	Lots of sweets	350
	Lots salty foods	365
	<b>Sleep</b>	Restless
After hours 11.00 PM		345
Insufficient hours		260
Insomnia		85
Lots of dreams		270
Nightmares		80
<b>Psychological status</b>		Fury
	Anxiety	160
	Stress	170
	Sadness	60
	Depression	35
	Low concentration power	25
	<b>Living environment</b>	Lack of personal time
No hobbies		365
Hectic entourage		120
Family problems		270
Lots of electromagnetically devices		365
Too many hours at job		250

**Figure 2.** The Pareto diagram

For each of these causes were set a series of targets presented in Table 3. After setting the targets were identified and

negotiated solutions necessary to meet them (Table 4).

**Table 3.** Matrix of personal goals on the short term (21 days) [4]

Group of causes	Objective
<b>Nutrition</b>	Increasing vegetable food through daily consumption of pure vegetable meals
	Reducing bread consumption at maxim 3 portions / day
	Reducing consumption of animal fat to 2 days / week
	Reducing consumption of refined foods (sweets) to 2 days / week
	Compliance the natural rhythm in which functioning the body
<b>Living environment</b>	Change the job in the next 6 months
	Allocating minimum 2 days/ week to family
	Participating at a training courses in the next 2 months
	Participating at list 1 nutrition workshop/ month
<b>Hydration</b>	Increase fluid intake to 4 glasses of alkaline water (250 ml) / day
	Reduce consumption of carbonated drinks in max 0.5 l / week
	Reduce consumption of coffee in max 2 cups / week
	Removing energy drinks

**Table 4.** Matrix of selection of improving solutions [4]

Objective	Solution	Client vote
Increasing food of plant origin through daily consumption of pure vegetable meals	Consumption of seasonal salads	
	Consumption of cream soups	
	Grilled vegetable consumption	<b>x</b>
	One meals per day with fruits	<b>x</b>
Reducing bread consumption at maxim 3 portions/day	Consumption of polenta	
	Consumption of bread made without yeast	
	Replacing with fresh vegetables	
	Replacing with cereals	<b>x</b>
Reducing consumption of animal fat to 2 days/week	Replacing animal milk with vegetable milk (walnuts, almonds, cashews etc.)	
	Maximum consumption at 2 times / week of goat's beat milk.	
	Maximum consumption to 2 times / week of fresh cheese goat.	<b>x</b>
	Replacing the animal fat with vegetable butter	<b>x</b>
Reducing consumption of refined foods (sweets) to 2 days / week	Replacing with dried fruits	<b>x</b>
	Replacing with raw vegan sweet dishes	
	Using the plant sugar substitutes	
	Replacing with honey	
Compliance the natural rhythm in which functioning the body	Eating just between 12 and 8 PM. In the morning just hydrating the body. Lunch must become the main meal per day. It allowed a meal with fruit in the morning.	
Change the job in the next 6 months	Suspending the work contract and participation in internships in this time	
	Networking	<b>x</b>
Allocating minimum 2 days/ week to family	No overtime at work	
	Reducing the overtime at work	<b>x</b>
	No working or studying in the weekend	
Participating at a training courses in the next 2 months	No overtime at work	
	Reducing the overtime at work	<b>x</b>
	No working or studying in the weekend	
Participating at list 1 nutrition workshop/ month	No overtime at work	
	Reducing the overtime at work	<b>x</b>
	No working or studying in the weekend	
Increase fluid intake to 4 glasses of alkaline water 250 ml	Purchase and use a bottle Nikken	
	Purchase a Kangen device	
	Alkalizing water with lemon juice	

Objective	Solution	Client vote
Increasing food of plant origin through daily consumption of pure vegetable meals	Consumption of seasonal salads	
	Consumption of cream soups	
	Grilled vegetable consumption	x
	One meals per day with fruits	x
Reducing bread consumption at maxim 3 portions/day	Consumption of polenta	
	Consumption of bread made without yeast	
	Replacing with fresh vegetables	
	Replacing with cereals	x
Reducing consumption of animal fat to 2 days/week	Replacing animal milk with vegetable milk (walnuts, almonds, cashews etc.)	
	Maximum consumption at 2 times / week of goat's beat milk.	
	Maximum consumption to 2 times / week of fresh cheese goat.	x
	Replacing the animal fat with vegetable butter	x
Reducing consumption of refined foods (sweets) to 2 days / week	Replacing with dried fruits	x
	Replacing with raw vegan sweet dishes	
	Using the plant sugar substitutes	
	Replacing with honey	
Compliance the natural rhythm in which functioning the body	Eating just between 12 and 8 PM. In the morning just hydrating the body. Lunch must become the main meal per day. It allowed a meal with fruit in the morning.	
Change the job in the next 6 months	Suspending the work contract and participation in internships in this time	
	Networking	x
Allocating minimum 2 days/ week to family	No overtime at work	
	Reducing the overtime at work	x
	No working or studying in the weekend	
Participating at a training courses in the next 2 months	No overtime at work	
	Reducing the overtime at work	x
	No working or studying in the weekend	
Participating at list 1 nutrition workshop/ month / day	No overtime at work	
	Reducing the overtime at work	x
	No working or studying in the weekend	
	Buying alkaline water from herbal stores.	x
Reducing consumption of carbonated drinks at 0.5 litters max / week	Replacing with natural fruit juice	
	Purchase and use a centrifugal juicer fruit and vegetables	
	Purchase and use of a shaft gear juicer fruit and vegetables	
	Replacing with medicinal plant tea	x
Reducing consumption of coffee at max 2 cups / week	Replacing coffee with chicory	
	Replacing coffee with carob	
	Replacing coffee with alkaline cocoa	
	Replacing coffee with cereal substitutes	x
Removing energy drinks (ED)	Replacing the ED with the freeze-dried herbal supplements	
	Replacing the ED with the food supplements	x

The counselling process was concluded with the planning of implementation solutions chosen by the client (Table 5) and with subsequent meetings frequency setting.

**Table 5.** Solutions implementation plan chosen by the customer 3 [4]

The objective	The solution to improve	What I needed?	When?	Stage of execution
Increasing food of plant origin through daily consumption of pure vegetable meals	Grilled vegetable consumption	Budget	3day/ week	
	One meals per day with fruits	Budget	Daily	

The objective	The solution to improve	What I needed?	When?	Stage of execution
Reducing bread consumption at maxim 3 portions/day	Replacing with cereals	Budget	Daily	
Reducing consumption of animal fat to 2 days/week	Maximum consumption to 2 times / week of fresh cheese goat.	Budget	2 day / week	
	Replacing the animal fat with vegetable butter	Budget	Daily	
Reducing consumption of refined foods (sweets) to 2 days / week	Replacing with dried fruits	Budget	Daily	
Change the job in the next 6 months	Networking	-	Max. 6 month	
Allocating minimum 2 days/ week to family	Reducing the overtime at work	-	In a week	
Participating at a training courses in the next 2 months				
Participating at list 1 nutrition workshop/ month				
Increase fluid intake to 4 glasses of alkaline water 250 ml / day	Buying alkaline water from herbal stores.	Budget	3 times / week	
Reducing consumption of carbonated drinks at 0.5 liters max / week	Replacing with medicinal plant tea	Budget	Daily	
Reducing consumption of coffee at max 2 cups / week	Replacing coffee with cereal substitutes	Budget	Daily	
Removing energy drinks (ED)	Replacing the ED with the food supplements	Budget	Daily	

Monitoring was conducted by filling the column with the progress made by the client in subsequent meetings.

It is worth noting that during counselling sessions were also recommended a series of complementary activities such as stretching exercises, meditation / prayer, dance classes, participation in trainings of personal development and taking into account that the customer is a practitioner Christian it was recommended the regular attendance of monasteries.

### 3. CONCLUSION

We conclude that this connection between the two areas give us the expected results. One of the main results, which we want to emphasize, was the raise awareness of the health of customers. Which led to the facilitation of the process of acceptance and implementation of solutions.

Another important finding was the reduction of time spent in the counselling sessions. Unfortunately, we are at the beginning and we don't have enough data

to prove the validation of this methodology.

### REFERENCES

- [1]Ene, F.V., Să ne tratăm singuri. Ghid de terapie naturistă, Ediția a VI-a revizuită și adăugită, Editura ALL, București, 2009
- [2]Goldrat, E.M., The Goal: A process of Ongoing Improvement, Great Barrington: North River Press, 2004
- [3]Laza, D., Manual edenic de medicină naturistă profilactică și terapeutică, Editura Risoprint, Cluj-Napoca, 2011
- [4]Zerbes, M.V., Popescu, L.G., Moraru, G.M., Study on the nutritional counseling - as personalized unique product, Proceeding of the 2nd International Multidisciplinary Scientific Conference on Social Sciences and Arts SGEM2015, Albena, 2015
- [5]<http://www.medicinacomplementara.ro/nutr.php>, accessed on 20.10.2016
- [6]<https://www.synevo.ro/colesterol-total/>, accessed on 23.10.2016