Research Article

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Evaluating the implementation potential of a transcultural tool for Tamil migrants with gestational diabetes mellitus living in Switzerland

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Abstract

Background: *Gestational diabetes mellitus is a condition that affects many pregnancies and ethnicity appears to be a risk factor. Data indicate that approximately 18% of Tamil women are diagnosed with gestational diabetes mellitus. Today, approximately 50,000 of Tamils live in Switzerland. To date, there is no official tool available in Switzerland that considers the eating and physical activity habits of this migrant Tamil population living in Switzerland, while offering a quick overview of gestational diabetes mellitus and standard dietetics management procedures. The NutriGeD project led by Bern University of Applied Sciences in Switzerland aimed at closing this gap. The aim of this present study was to evaluate the implementation potential of the tools developed in the project NutriGeD for dietetic counseling before their wide scale launch in Swiss hospitals, clinics and private practices.*

Method: *An online survey was developed and distributed to 50 recruited healthcare professionals working in the German speaking region of Switzerland from October – December 2016 (31% response rate). The transcultural tools were sent to participants together with the link to the online survey. The evaluation outcome was analysed using binary logistic regression and cross tabulation analysis with IBM SPSS version 24.0, 2016.*

Results: *94% (N=47) respondents believed that the transcultural tools had good potential for implementation in hospitals and private practices in Switzerland. A binary logistic regression analysis revealed that the age of participants had a good correlation (42.1%) on recommending the implementation potential of the transcultural tool. The participants with age group 34- 54 years old where the highest group to recommend the implementation potential of the transcultural tool and this was found to be statistically significant (p=0.05). 74% (34 out of 50) of the respondents clearly acknowledged the need for transcultural competence knowledge in healthcare practices. 80% (N =40) of the respondents agreed that the information presented in the counseling display folder was important and helpful while 60% (N= 30) agreed to the contents being clinically applicable. 90% (N=45) participants recommended the availability of the evaluated transcultural tools in healthcare settings in Switzerland.*

Conclusion: *The availability in healthcare practice of the evaluated transcultural tools was greatly encouraged by the Swiss healthcare practitioners participating in the survey. While they confirmed the need for these transcultural tools, feed-backs for minor adjustments were given to finalize the tools before their official launch in practice. The developed materials will be made available for clinical visits, in both hospitals and private practices in Switzerland. The Migmapp© transcultural tool can serve as a good approach in assisting healthcare professionals in all fields, especially professionals who practice in areas associated with diet - related diseases or disorders associated with populations at risk.*

Keywords: Gestational diabetes mellitus, Tamil migrants, Transcultural competence, Dietetic counseling, Switzerland.

Introduction

Gestational diabetes Mellitus (GDM) is a common medical condition that is characterized by glucose/carbohydrate intolerance of different severity and is first recognized during pregnancy (World Health Organization 1999)[1]. Women who have a history of GDM are at a high risk of developing type II diabetes in the future [2]. GDM arises because of maternal hyperglycaemia, which transfers excess glucose to the foetus resulting into hyperinsulinemia for the mother. This causes an over growth of insulin sensitive tissues, such as adipose tissue around the chest, shoulders and abdomen which then increases the risk of shoulder dystocia and even perinatal death [3]. Glucose intolerance occurs most frequently among postpartum women who had GDM, based on the 2013 WHO criteria for two-step approach screening strategy. Moreover, most of these postpartum women are more likely to have impaired

beta cell function [4].

The potential benefits of recognizing and treating GDM will bring about a reduction in ill health of the woman as well as the baby during or immediately after pregnancy. This will reduce the risk of progression to type II diabetes on long-term or of future pregnancies being complicated by pre-existing GDM [5]. Gestational weight gain during early pregnancy is a modifiable risk factor and healthcare providers need to put more attention into it [6,7]. suggested that clinicians need to be aware of significant risk factors in large for gestational age new-borns from gestational diabetic mothers by using the body mass index thresholds. The eating pattern during pregnancy is a risk factor for GDM, and therefore, should not be left unnoticed [8]. Managing GDM using lifestyle changes has a significant impact on health outcomes [9]. The prevalence of GDM leading to type II diabetes in women and offspring can be reduced by introducing a novel approach to increase the knowledge of women on GDM [6].

Sri – Lankans, especially the Tamils are one of the most populated migrant groups in Switzerland and data estimate at 50,000 the number of Tamil migrants living in Switzerland [10,11]. Sri-Lankans especially the Tamils, have ethnicity from the sub Indian subcontinent. Migrant populations have been shown to have a higher prevalence of diseases (e.g. type II diabetes) over the years when compared with natives. Specifically, the South Asian migrants are most vulnerable to developing insulin resistance and type II diabetes mellitus, which can lead to the development of other non-communicable diseases [12]. Due to genetics and lifestyle changes, Tamil migrants have shown to be a high-risk population for the development of GDM [13]. Current studies have shown that approximately 18% of pregnant Tamil women develop GDM [14]. Nutrient intake plays a very important role in providing optimal health outcome in all pregnancies, and in the case of GDM, good glucose control is as important as adequate nutrient intake and appropriate weight gain [9].

Currently in Switzerland, there are no tools to address the eating and physical activity habits of the Tamil migrant population. This knowledge gap together with the language barrier jeopardizes a successful communication with migrant patients, which ultimately impedes adequate therapy for these patients. Based on this premise, the project Nutrition Gestational Diabetes (NutriGeD) was created in 2015. NutriGeD addressed the topic of transcultural dietetics counseling and aimed at filling the gap among healthcare professionals in Switzerland who treat migrant populations specifically Tamils on a regular basis. The applied R&D team in nutrition and dietetics from the Health Division of Bern University of Applied sciences developed a series of transcultural tools called the "Migmapp©" i.e. Migration map. The Migmapp© comprises of a referential handbook with five (5) chapters covering the pathophysiology of GDM, transcultural competence, Tamils in Switzerland, mode of treatment and follow-up care after childbirth. This was created for healthcare professionals. The other part of the Migmapp© is a counseling display folder consisting of pictures and illustrations on GDM, recipes of a Tamil food and meal distribution in cases of GDM. This is to be used by the healthcare professional and the Tamil patient. The aim of the present study was to evaluate the implementation potential of the Migmapp© transcultural counseling tool in practice from the perspective of Swiss healthcare professionals.

Methods and Materials

This study involved two phases, a preliminary phase and a main study. They both involved the development of an online survey questionnaire.

Preliminary phase: This phase preceded the main study. An evaluation of the transcultural tool was carried out for clarifications, feed-back comments on possible errors and fine-tuning of the transcultural tools. The survey included 24 questions and was distributed to 10 healthcare professionals. The participants for this study were mostly registered dietitians and nutritionists

Table 1: Demographic characteristics of participants in the preliminary phase

Respondents characteristics	Frequency (Total N= 10)	Percent (Total N =100%)
Sex:		
Male	0	0%
Female	10	100%
Age:		
Up to 24	0	0%
25 – 39	3	30%
40 – 54	4	40%
55 - 64	3	30%
Highest qualification obtained:		
Diploma:		
Subsequent FH title	1	10%
Bachelor degree	3	30%
Master's degree	2	20%
Doctorate degree (MD, PHD)	0	0%
Continuing education (CAS, DAS; MAS)	1	10%
Other	1	10%
Profession:		
Registered dietitian	3	30%
Nutritionist	3	30%
Diabetic expert	1	10%
Medical doctor	0	0%
Professor	0	0%
Scientific collaborator	0	0%
Administrator	0	0%
Nurse	1	10%
Midwife	1	10%
Other (project management)	1	10%
Active in practice:		
Less than 5 years	0	0%
5 -9 years	3	30%
10- 19 years	3	30%
20 years or more	4	40%

Table 2: Demographic characteristics of participants in the main study

Characteristics	Frequency (Total N=50)	Percent (Total N = 100%)
Sex:		
Male	2	4%
Female	48	96%
Age:		
Up to 24	1	2%
25 – 34	8	16%
35 – 54	36	72%
55 – 64	4	8%
65 and above	1	2%
Highest qualification obtained:		
Apprenticeship	6	12%
Subsequent FH title	20	40%
Bachelor degree	11	22%
Master's degree	2	4%
Doctorate degree (MD, PHD)	2	4%
Others	9	18%
Profession:		
Registered dietitian	32	64%
Nutrition scientist	0	0%
Diabetic expert	13	26%
Medical doctor	2	4%
Nurse	4	8%
Midwife	2	4%
Other	1	2%
Work setting:		
Hospital	45	90%
Dietitian's practice	7	14%
Industry	0	0%
Research	0	0%
Education	5	10%
Non-profit organization	1	2%
Other	1	2%
Years of activity in practice:		
Less than 5 years	10	20%
5-9 years	8	16%
10-19 years	18	36%
20 years or more	14	28%

Main study: The present study involved the evaluation of the implementation potential of the transcultural tools developed within the scope of the NutriGeD project. The survey included 29 questions and was distributed to 50 recruited healthcare professionals (32 registered dietitians, 13 diabetic experts, 2 medical doctors, 2 midwives and 1 nurse) (Table 2) working in the German speaking region of Switzerland (31% response rate). The transcultural tools were sent to participants together with the link to the online survey. Data were analysed using binary logistic regression and cross tabulation analysis with IBM SPSS version 24.0, 2016.

Demographic characteristics of participants in the main study

96% of the participants were females. Most participants belonged to the age group of 35 -54 years old (72%), followed by the age group of 25 – 34 years old (16%). 40% of the participants selected "subsequent FH title" which means "continuing education degree in applied universities" as their highest qualification obtained, 22% had Bachelor degree as their highest qualification obtained and 12% had apprenticeship. Most participants were registered dietitians (64%) followed by diabetic experts (26%). The majority of participants worked in a hospital setting (90%). 36% of the participants counted between 10 and 19 years of activity in practice, while 28% had been professionally active for 20 years or more (**Table 1**).

Results

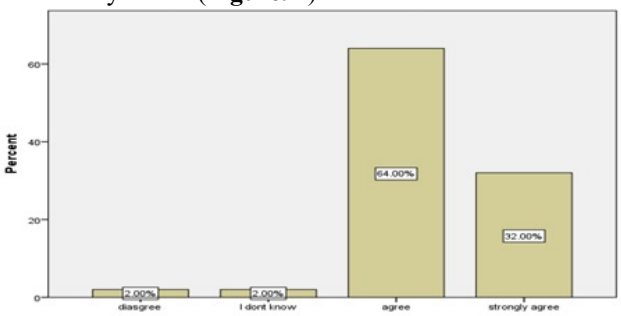
Preliminary study

10 participants filled the online survey for the preliminary phase. There was evidence to show that the Migmapp© can be accepted by Swiss health care professionals but needs further improvements. 9 out of 10 participants found the chapter on transcultural competence to be clear and understandable. 8 out of 10 participants were satisfied with the counseling display folder and would use it if they should treat a Tamil patient with GDM living in Switzerland. They were changes made on the tools based on feed-back pertaining to the content, format and structure of the developed material. Overall, the tools were considered to be innovative and interesting.

Evaluation study

Implementation potential of the transcultural tool

50 professionals participated and filled out an online survey questionnaire (response rate of 31%). The first part of the questionnaire examined each chapter of the Migmapp© handbook using the five (5) point Likert scale (where 1 = strongly disagree, 2 = disagree, 3 = I don't know, 4= agree, 5= strongly agree). 96% of the Swiss healthcare professionals agreed to strongly agreed that the contents of the first chapter on pathophysiology of GDM was scientifically sound (**Figure. 1**).

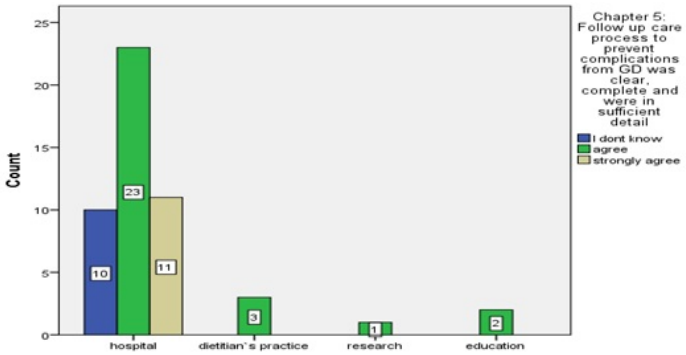


Chapter 1: GDM Content scientifically sound

Figure 1: Evaluation of the contents of chapter 1 of the handbook (pathophysiology of GDM)

The chapter two on transcultural competence consists of subchapters, namely: self-reflection, narrative empathy and background knowledge. 74% of the participants agreed to

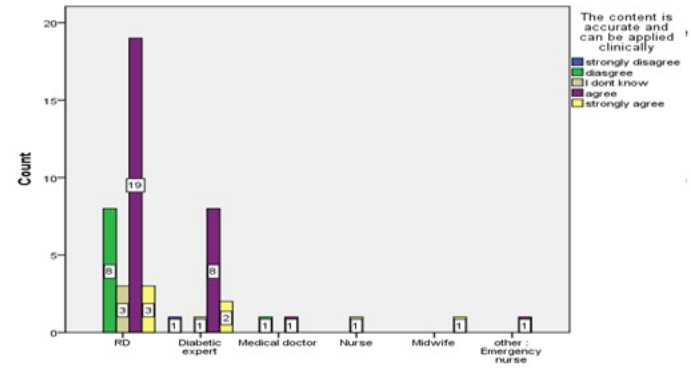
understanding the information provided in this second chapter and its importance and meaningfulness in healthcare. Concerning the chapter three that covered the Tamil population in Switzerland, 40 out of 50 participants agreed that the aspects related to the socio demographics of the Tamil population being were relevant and important. As far as chapter four, 78% of the respondents agreed to strongly agreed that the information pertaining to treatment therapy in case of GDM was presented in sufficient detail. For chapter five that included information regarding follow-up care and how to prevent complications resulting from GDM, 80% of the respondents agreed to strongly agreed that the content was clear, complete and presented in sufficient detail. That was particularly for respondents who worked in hospitals (**Figure.2**).



Setting of Professional Practice

Figure 2: Follow-up care to prevent GDM complications and settings of professional practice

As far as the counseling display folder, 60% (n =30) of the participating Swiss healthcare professionals agreed that the content presented was clinically applicable (**Figure.3**) and 58% (n=29) would recommend its implementation in healthcare practices.



Profession

Figure 3: Clinical relevance of the counseling display folder

Overall 96% (N=48) of respondents believed that the transcultural tools including the handbook and counseling display folder had a good potential for implementation in hospitals and private practices in Switzerland (**Figure. 4**).

Figure 4: Overall evaluation of the implementation potential of the transcultural tools developed in the NutriGeD project

Binary logistic regression analysis on Implementation potential

The nagelkerke R square (pseudo R2) showed more variation of the dependent variable explains better the co-efficient of determination on the implementation potential of the transcultural tool due to its higher variance (42.1%)

Table 2: Model summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	18.567[a]	.079	.217
2	14.354[b]	.154	.421

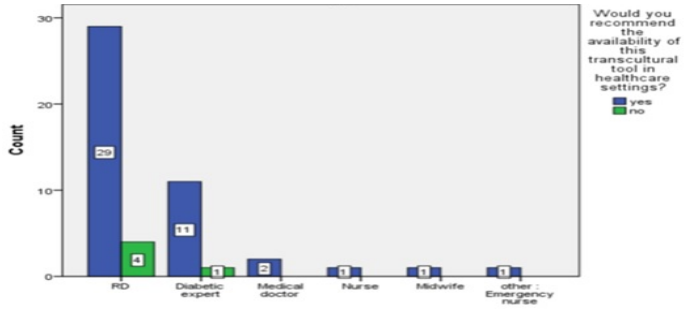
a. Estimation terminated at iteration number 6 because parameter estimates changed by less than .001.
b. Estimation terminated at iteration number 8 because parameter estimates changed by less than .001.

Table 3: Variable in the Equation

							95% C.I.for EXP(B)		
		B	S.E.	Wald	df	Sig.	Exp(B)	Lower	Upper
Step 1[a]	age	-1.801	.919	3.842	1	.050	.165	.027	1.000
	Constant	12.141	5.048	5.785	1	.016	187387.531		

a. Variable(s) entered on step 1: age.

Table 3 showed that the age of the participants as an independent variable had a significant impact (p=0.05) on the implementation potential of the transcultural tool. This implies that increasing age of participants was found to be associated with the likelihood of participants who answered YES, to exhibit the implementation potential of the transcultural tool to be used in practice. Most participants 90% (N=45) recommended the availability of the evaluated transcultural tools in healthcare settings (**Figure 5**), while respondents within the age range of 35 to 54 years (N=34, 68%) believed that the transcultural tool has good potential for practice (**Figure. 6**).



Profession

Figure 5: Recommendation of the availability of the transcultural tool in practice

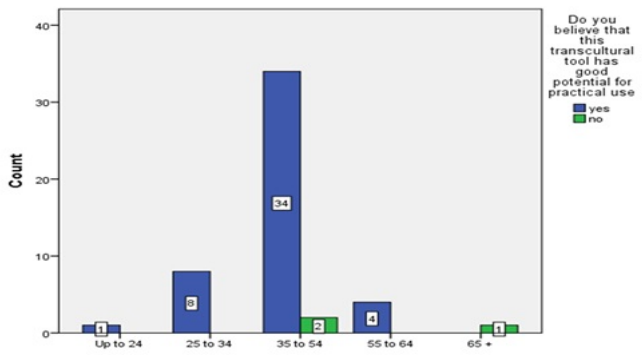


Figure 6: Evaluation on the age of respondents correlated with implementation potential of the transcultural tool for practice

Discussion

Currently, there are few transcultural tools used in healthcare settings as well as little studies done to evaluate them, specifically for counseling practices or for specific migrant groups. In Switzerland, there is no official tool that considers the eating and physical activity habits and preferences of the Tamil population. Therefore, the NutriGeD project was a unique approach in filling the knowledge gap of transcultural competence and language barriers between healthcare professionals and migrant patients. The aim of the present study was to evaluate the implementation potential of the transcultural tools developed within the scope of the NutriGeD study for the dietetics counseling of pregnant Tamil women with GDM living in Switzerland. The data obtained suggest a high acceptability rate of the tools among Swiss healthcare and willingness to see them being implemented in healthcare settings. This study recorded more females (48) than male (2) respondents. This correlates with a study done by Pollard et al, suggesting that healthcare as a body is a female domain with a majority of women working in allied health professions such as nursing and dietetics [15]. This may account for the higher proportion of females taking part in this study. It would have been interesting to see the effect of gender as an independent variable on the implementation potential. The most represented professionals in this study were the registered dietitians accounting for 64% of the respondents. They were the major target profession for this study as well.

The chapter on pathophysiology and biochemistry of GDM was found to be scientifically sound by most respondent (96%). Regardless, there were comments on reducing the content of this chapter as some respondents suggested that it was too detailed. This was rather a misconception as some participants thought the handbook was for the patients but the handbook was created to be used by healthcare professionals.

Many of the participants suggested that the information provided in the handbook was useful especially for professionals in healthcare who specifically counsel Tamil patients. A regulated approach is needed and recommended for optimum healthcare services [16]. The Migmapp© transcultural tool once finalized in its structure and content could serve as an example for such recommendations. 74% of the Swiss healthcare professionals agreed to understand the content of the chapter on transcultural competence and its relevance in healthcare practices but some participants requested for its content to be increased as it was a central part of the transcultural tool. They would have wished for more information on how best to improve their cultural competence in the healthcare setting. A similar study done in Sweden on increasing knowledge on transcultural competence involved 5 individual interviews and 5 focus groups among healthcare staff from an oncology department and their patients. It was concluded that to attain a high-quality care, a health care staff need to understand or have an idea of the culture, language and social situation of the patients involved in order to bridge the challenges that may arise in transcultural relationships. This study elaborated the importance of transcultural relationships in healthcare services [17]. Some suggestions and comments included the addition of Tamil dishes and information on their carbohydrate contents as this would assist in the management of GDM. It would be interesting to evaluate the application of the tools in practice during counseling hours between a Swiss health care expert and a Tamil patient with GDM. This would further evaluate the tool specifically for the target group in the practice context [18].

The counseling display folder was accepted by most respondents and a majority of participants made positive comments on its implementation potential in practice. In total, 80% of the respondents agreed to strongly agreed that the information presented was important and helpful. In addition, 60% of the respondents agreed with the fact that the content presented in counseling the display folder could be used in the clinical setting (N=30). This result was similar to the study done by Gans et al. (2006) on the development and implementation feasibility of the Rapid Eating and Activity Assessment nutrition tool for primary health care providers. The results from Gans et al, showed that the tool was highly accepted by most respondents of the study [18]. They found the tool very helpful in keeping track of their patients' data and confirmed that it can be used in a clinical setting.

The evaluation of the implementation potential of the transcultural tool using binary logistic regression analysis was performed to ascertain the effects of age, profession, years of active practice and highest qualification obtained on the likelihood that the participants believed and recommends the transcultural tool for implementation into practice. The variable age had a significant impact ($p = 0.05$) on implementation potential, which further explained a good correlation with the variance (42.1%) co-efficient of determination on the implementation potential of the transcultural tool. This variance co-efficient of determination correctly classifies 96% of the cases from the data. Therefore, increasing age of the participants was found to be associated with an increased probability of the participants who said YES exhibiting the implementation potential of the tool in practice. As explained earlier on the format of the Migmapp© tool, most respondents within the age group 35 – 54 years old found the tool to be more accustomed to their use when compared to other age groups. This might be that the younger age groups would prefer the transcultural tool as an electronic application software in devices rather than the old style of folder to be used during consultations. The age groups 34-54 years old were also the highest age group to believe that the tool has good potential for practical use. Therefore, the age of participants in this present study had an important role in the evaluation and recommendation of the implementation potential of the transcultural tools.

This present study can be said to be similar to a study by Carrel et al. on investigating the opinions of Swiss health care professionals for the implementation of the Swiss child health booklet. Carrel et al. study concluded that the clinicians who participated in the study agreed for the implementation of the Swiss child health booklet as it gives a good summary on the child`s health for easy use comparably to this present study, as the Swiss healthcare professionals who participated in this study agreed to the implementation potential transcultural tool. They further gave comments on how the transcultural can be used as an assistance when counseling a Tamil patient with GDM and this would provide a good summary or guidelines on the best therapy for the patient. All the evaluation and analysis done revealed that age of the Swiss healthcare professionals was the best fit for the model of the predicted data and had a significant impact on implementation potential [19].

Recommendations

The Migmapp© transcultural tool received overall positive reviews from the participating healthcare professionals. Some adjustments were recommended to be made before its implementation in healthcare settings in Switzerland Based on the results from the survey, there is a need among healthcare professionals in Switzerland for further tools made available for other migrant.

Conclusion

The evaluation of the implementation potential of the Migmapp© transcultural tool for dietetics counseling of Tamil migrants GDM living in Switzerland proved that the tool was accepted by majority of the participating Swiss healthcare professionals. The findings suggest that there is a need for such tools to be integrated into healthcare services in Switzerland for use in practice. The Migmapp© transcultural tool can be used as an aid in healthcare services for the improvement in communication, better dialogue between healthcare practitioners and their patients, knowledge increase on transcultural competence in healthcare and the understanding of diverse cultural groups, and lastly to promote a culturally competent treatment. The Migmapp© transcultural tool can serve as a good approach for assisting healthcare professionals in all fields, especially professionals who practice in areas which handle diet - related diseases or disorders associated with at risk populations, thereby providing optimum healthcare services for their patients.

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