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# Quality of life of health professionals in multidisciplinary residency programs

Qualidade de vida dos profissionais de saúde dos programas de residências multidisciplinares Calidad de vida de los profesionales de salud de los programas de residencias multidisciplinares

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**Abstract:** Objective: characterize the professionals in Multidisciplinary Residency programs according to sociodemographic, educational, and daily living activity data, such as sleep and eating habits, and assess their quality of life (QoL). **Method**: descriptive, cross-sectional, quantitative study conducted at a public university in early 2014. The tool used to assess quality of life was the World Health Organization Quality of Life-BREF (WHOQOL-BREF), applied via an electronic platform. **Results**: the tool's reliability ranged from 0.63 to 0.79. Forty-nine percent of enrolled residents participated: mostly women, 25 years old, single and from São Paulo. The residents sleep an average of six hours per night and reported eating relatively healthily. The QoL score in the Physical health domain was 55.96; Psychological 56.96; Social relationships 62.76, and Environment 49.65. **Conclusion**: The WHOQOL-BREF's assessment indicated that the QoL of the residents is impaired in most of the domains.

Keywords: quality of life; health sciences students; health occupations; professional training.

Resumo: Objetivos: caracterizar os profissionais dos programas de Residência multiprofissional quanto aos dados sociodemográficos, educacionais e rotinas de vida diária como sono e hábitos alimentares e avaliar sua qualidade de vida (QV). Método: estudo descritivo, transversal, quantitativo realizado em uma universidade pública no início de 2014. O instrumento utilizado para avaliação da qualidade de vida foi *o World Health Organization Quality Of Life-bref* (WHOQOL-bref), aplicado por meio de plataforma eletrônica. Resultados: a confiabilidade do instrumento variou de 0,63-0,79. Participaram 49% do total de residentes matriculados, a maioria mulheres, com 25 anos, solteiras e procedentes de São Paulo. Os profissionais residentes dormem em média seis horas por noite e referem alimentação mais ou menos saudável. A pontuação da QV no domínio Físico foi de 55,96; Psicológico 56,96; Relações Sociais alcançou 62,76 e Meio Ambiente de 49,65. Conclusão: a avalição do WHOQOL-bref revelou que, na maioria dos domínios, a QV dos residentes é comprometida.

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**Descritores**: qualidade de vida; estudantes de ciências da saúde; ocupações em saúde; capacitação profissional.

Resumen: Objetivo: caracterizar los profesionales de programas de Residencia Multiprofesional a partir de dados sociodemográficos, educacionales y rutinas de vida como sueño y hábitos alimentares y evaluar su calidad de vida (CV). Método: estudio descriptivo, transversal, cuantitativo realizado en una universidad pública en el inicio del 2014. El instrumento utilizado para evaluación de calidad de vida fue el Word Health Organization Quality of Life-bref (WHOQOL-bref), aplicado por la plataforma electrónica. Resultados: la confiabilidad del instrumento varió de 0,63-0,79. Participaron 49% del total de residentes matriculados, la mayoría mujeres, con 25 años, solteras, procedentes de São Paulo. Los profesionales residentes duermen en media seis horas por noche y refieren alimentación más o menos saludable. La puntuación de CV en el dominio Físico fue 55,96; Psicológico 56,96; Relaciones Sociales 62,76 y Medio Ambiente 49,65. Conclusión: la evaluación del WHOQOL-bref reveló que, en la mayoría de los dominios, la CV de los residentes es comprometida.

Descriptores: calidad de vida; estudiantes del área de la salud; empleos en salud; capacitación profesional.

### Introduction

The National Scholarship Program for Multidisciplinary Residencies and in the Professional Area of Health was instituted through Interministerial Ordinance No. 1077, of 12 November 2009<sup>1</sup>. In 2010, various programs were launched in the country, mostly linked to federal universities and approved by the Ministry of Education and Culture. In a short period of time, there was a significant increase in the number of scholarships: from 2010 to 2014, they rose by 700%. The contingent of multidisciplinary residents in this period jumped from slightly over 400 to more than 3,200.<sup>2</sup>

The multidisciplinary programs were shaped similarly to medical residency programs with identical scholarship amounts and working hours, predominantly on-the-job. Residents must complete 60 hours weekly, of which 80% correspond to practical activities and 20% to theoretical activities.<sup>1</sup>

Despite the established medical residency model in terms of its emphasis on practical activities carried out in 60 weekly hours, the impact of these extensive working hours on the physical and mental health and quality of life of medical residents has been

questioned for a long time.<sup>3</sup> Impaired quality of life (QoL) can affect learning, concentration and motivation for studies. Health professionals/students are not exceptions, as pointed out in some studies.<sup>3-4</sup>

It is important to note that even though resident professionals (medical or multidisciplinary) are not permanent staff, their work activities are similar or even more exhausting than those of other workers from the same professional area. However, residents are considered graduate students – seeking to obtain the competencies required by the profession – and not workers, despite carrying out work activities during 80% of their obligatory course hours, which exposes them to occupational risks and professional civil liability.<sup>5</sup>

Considering that residents are in a process of advanced professional training, with an emphasis on practical activities, are in direct daily contact with patients and their living conditions can have an effect on the learning process and care provided, the following question guided the present study: What is the quality of life of professionals enrolled in the programs?

Consequently, the objective was to characterize the professionals in the Multidisciplinary Residency programs according to sociodemographic, educational, and daily living activity data, such as sleep and eating habits, and assess their quality of life.

#### Method

This is a descriptive, cross-sectional study with a quantitative approach that was conducted in a university hospital, linked to a federal university, located in the city of São Paulo.

The data was collected in January and February 2014 and the sample was comprised of 128 of the 263 residents from various programs and professions, who agreed to participate in the study.

The questionnaires were transformed into electronic forms and sent by email to each resident so that they could access and respond to them online. This application strategy was chosen because it enabled respondents to access the forms at any time and when it was most convenient for them. It also considered ease of Internet use by the majority and the possibility of approaching all the residents in a short period of time. However, since it is not common to apply QoL-related questionnaires electronically in the environment of the study, it was decided to check the reliability of the tool applied to the sample.

The Google Docs platform is available for free and can be used without restrictions. The application makes it possible to create forms that can be accessed by participants and, after their completion, respondents can send them back. These, in turn, are available online so that those responsible for creating the forms can access them. The application also permits making the results viewable or not to the other participants. In the present study, all the information from the electronic database was only available to the researchers.

Each participant completed two questionnaires, sent separately. The first contained questions about their sociodemographic and student profile and daily living activities (number of hours of sleep per day and quality of eating habits). The second was the specific QoL assessment instrument – the World Health Organization Quality of Life-BREF (WHOQOL-BREF). Each one contained a reminder to answer the other questionnaire, as well as the respective guidelines for completion. The first question

involved agreement to participate in the study, and if affirmative, gave the respondent access to the other questions.

The WHOQOL-BREF is a general QoL assessment tool developed by the World Health Organization (WHO) and constitutes a shortened version of the WHOQOL-100. The tools were designed based on the premise adopted by the WHO that "quality of life is an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns." For scholars on the topic, QoL cannot be assessed by only taking into consideration one aspect of life, such as health or working conditions. Thus, QoL should be measured viewing it as a multidimensional construct and that an individual's life is multifaceted, composed of various domains.

The WHOQOL-BREF is composed of 26 questions. The first two are generic and ask how individuals rank their quality of life (Q1) and the second (Q2), how satisfied they are with their health. The rest are distributed into four domains: Physical health; Psychological, Social relationships and Environment, totaling 24 additional questions. For each question, participants choose an option related to degree of intensity, capacity, frequency or assessment, depending on the type of question. All are distributed on a Likert scale which ranges from 1 to 5 points. Each option has a corresponding value where, in most cases, each successive option is assigned a higher value and, for certain specific questions, it is the reverse. The final QoL scores are tabulated separately by domain, and there is no sole score. The domain score is calculated by multiplying the mean of all of the items in each domain by four. Therefore, scores can range from zero to 100, where the higher the score, the better the quality of life in the domain assessed.

In the analysis of the other variables, the mean, standard deviation, median, minimum and maximum were calculated for the continuous variables. For the categorical

variables, frequency and percentage were calculated. To correlate the variables with their respective domains and each domain with questions Q1 and Q2, the Spearman correlation coefficient was used. In relation to the reliability analysis of the tool, internal consistency by domain was determined through Cronbach's alpha, where  $\alpha \le 0.3$  is considered very low reliability,  $\alpha$  from 0.31 - 0.59 low, 0.6 - 0.75 moderate, 0.76 - 0.9 high.<sup>7</sup> A significance level of 5% (p-value  $\le 0.05$ ) was used.

The study was approved on January 8, 2014, by the institution's Ethics Committee for Research involving Human Beings (Opinion No. 507856, CAAE 25317013.4.0000.5505) as per the ethical aspects of Resolution No. 466/2012 of the National Health Council.

# **Results**

Of the 263 multidisciplinary residents enrolled in the university's residency programs, 109 answered the questions on sociodemographic characteristics and other data of interest, corresponding to 42% of the total.

In relation to the sociodemographic and educational data of the residents, a predominance was noted in the following aspects: female, with a mean age of 25 years, single, coming from public universities and living in the capital. More specific data can be found in Table 1.

**Table 1-** Distribution of multidisciplinary residents according to sociodemographic, socioprofessional and educational data. São Paulo, 2014

Variables (n=109)	n	%
Sex		
Female	100	91.75
Age group (years)		
20 to 25	69	63.31
26 to 30	36	33.03
31 to 35	2	1.83

36 to 40	_	_
> 40	2	1.83
Marital Status		
Married	9	8.26
Single	98	89.9
Other	2	1.84
Professional Area		
Social Work	8	7.34
Nursing	27	24.77
Pharmacy	9	8.26
Physiotherapy	17	15.6
Speech Therapy	9	8.26
Nutrition	11	10.09
Psychology	22	20.18
Did not respond	6	5.5
Institution where they had studied (undergraduate)		
Private	48	44.03
Public	61	55.97
Number of years since graduating		
1 to 1.5	45	41.29
2 to 2.5	43	39.45
3 to 3.5	14	12.84
≥ 4	7	6.42
City of Origin		
São Paulo - Capital	54	49.54
Other city/state	55	50.46
Lives with		
Spouse or partner	13	11.93
Parents	43	39.44
Fellow students	32	29.36
Alone	13	11.93
Other	8	7.34
Financial assistance apart from scholarship		
No	87	79.92

In terms of hours of sleep, of the total number of respondents (109), 31 residents (28.44%) said they sleep up to 5 hours per night, 56 (51.38%) sleep around 6 hours and 22 (20.18%) reported sleeping 7 to 8 hours daily. In relation to eating habits, based on self-perception, 15 (13.76%) responded that they eat healthily, 52 (47.7%) chose the option more or less and 42 (38.54%) selected the negative option.

In relation to the QoL questionnaire, of the 263 multidisciplinary residents enrolled in the residency programs, 128 answered the questions from the WHOQOL-BREF, representing 49% of the total.

In relation to Q1 "How would you rate your quality of life?" and Q2 "How satisfied are you with your health?", the percentages are presented in Table 2.

Table 2 - Descriptive analysis of Questions 1 and 2 from the WHOQOL-BREF. São Paulo, 2014

Q1. How would you rate your quality of life: Q2. How satisfied are you with your health?					
(n=128)		(n= 263)			
Option	n (%)	Option	n (%)		
Very poor	5 (3.9)	Very dissatisfied	10 (7.8)		
Poor	35 (27.3)	Dissatisfied	44 (34.4)		
Neither poor nor good	46 (35.9)	Neither satisfied nor dissatisfied	25 (19.5)		
Good	37 (28.9)	Satisfied	45 (35.2)		
Very good	5 (3.9)	Very satisfied	4 (3.1)		

It is also worth noting that the reliability of the tool applied to the participants electronically, based on the four domains, was 0.7 using Cronbach's alpha. In regard to the QoL scores, the means of the domains are presented in Table 3. Questions Q1 and Q3 have significant correlations in all the domains, with r ranging from 0.42 to 0.65 (p< 0.0001).

**Table 3** – Mean scores of quality of life domains-WHOQOL-BRE according to multidisciplinary residents. São Paulo, 2014

QoL Domain	Physical h	Psychologi	Social relationshi <sub>l</sub>	Environme
Mean score	55.96	56.95	62.76	49.65
Cronbach's alpha	0.77	0.79	0.63	0.64

# **Discussion**

The sample was primarily composed of female professionals, young people and singles. Considering that women represent the largest number of university students in the country, the results reflect this reality.<sup>8</sup>

The professionals represented in the programs were nursing, pharmacy, physiotherapy, speech therapy, nutrition and psychology, with the largest number of participants in nursing and physiotherapy. This is due to the fact that these professions have the largest number of places in most of the programs.

It should be noted that, in 2014, the institution offered 151 places in multidisciplinary programs, distributed among various health professions (Notice 710/2013). The total number of candidates in the selection process was 753, resulting in around five candidates per place (data calculated from information from the coordinators of the institution's residency program). This proportion shows the demand for multidisciplinary residency programs by recent young graduates who may be attracted by the possibility of doing a specialization in their professional area. An additional attraction may be receiving a scholarship of BRL 3,330 (2018) which, in some professions, is higher than the starting salary offered in the job market. According to an employment institute, the mean salary of a nutritionist in Brazil is BRL 2,447,20; a physiotherapist receives on average BRL 2,188 and a nurse BRL 3,092, for example. The 60 working hours per week does not initially appear to be a deterrent in the search for residency programs.

Around one-half of the residents were from the state capital and most lived at home with their parents. However, the other half were from other parts of the state or another state, demonstrating that São Paulo continues to attract professionals from other regions for work and studies. This is probably due to the fact that the state, particularly the capital, is considered one of the most developed in the country, with the best Human Development Index indicators, especially in the area of education.<sup>11</sup>

In relation to daily habits, one alarming result that could impair the health and overall performance of residents is that most (approximately 80%) sleep six hours or less per night and approximately 65% selected the option "dissatisfied" or "very dissatisfied" regarding sleep. A study that assessed sleep normality showed that healthy young adults need from 7 to 9 hours of sleep daily.<sup>12</sup> In addition, not enough hours of sleep per night can be an important factor for the deterioration of health conditions and well-being, and lack of sleep is a contributing factor to daytime drowsiness, discouragement and symptoms of depression, among others.<sup>13</sup> Excessive drowsiness was also one of the problems identified in a literature review among medical residents, in addition to burnout, stress, fatigue, difficulties coping with conditions of life and work and the relationship between working hours and quality of life.<sup>3</sup>

Another relevant study on sleep deprivation among medical residents in an ICU and coronary care unit found that those who worked traditional on-duty shifts (24 hours or longer) tended to have a higher rate of errors during daily practice than those with shorter shifts. These results indicate the importance of sleep and rest to minimize possible errors during shifts. Although shifts exceeding 12 hours without rest are not permitted in the multidisciplinary residency studied, total weekly working hours are the same as medical residents – both higher than the legal working hours of workers in general. As in the case of any worker with long working hours combined with sleep deprivation, the possibility of errors in the performance of tasks and/or occupational accidents is a widely known occurrence among health professionals. 15

In terms of eating habits, based on self-perception, only 15 residents (13.76%) reported that they eat healthily. Almost one-half of the respondents, i.e., 52 (47.7%), marked the "more or less" option" and 42 (38.54%) said they do not eat properly. It should be clarified that all residents are entitled to free meals (breakfast and lunch) in the institution

itself and most have lunch regularly in the cafeteria allotted for medical and multidisciplinary residents.

Similar to the participants of the present study, young people and students, in general, do not consider their eating habits to be adequate, including students in the field of health. <sup>16</sup> Poor eating habits among young adults is a widespread phenomenon, also noted among Italian<sup>17</sup> and Lebanese<sup>18</sup> university students. Inadequate eating habits among undergraduate students and recent graduates may be due to various factors, including financial problems, irregular schedules or lack of knowledge on recommended nutrition. <sup>19</sup>

It should be pointed out that proper eating habits, together with other factors, can reduce or prevent the emergence of various diseases, in the present (acute infections) and future (chronic diseases).<sup>20</sup> Among academics themselves, there is a clear relationship between good health (including good nutrition) and good academic performance. <sup>21</sup>

With respect to the results of applying the QoL questionnaire, the WHOQOL-BREF had good reliability via an electronic form, with Cronbach's alpha higher than 0.7 in the Physical health and Psychological domains. In the Social relationships and Environment domain, it was 0.63 and 0.64, respectively. For the first two, the results are considered satisfactory and in the last two, despite the lower values, they are considered acceptable. These scores are due to the fact that the Social relationships domain has fewer items and that the Environment domain encompasses different elements in the same domain, such as physical environment, safety, transport, financial resources and opportunities for acquiring new information. The characteristics of the domains (few items or various elements in the same domain) tend to lower Cronbach's alpha.<sup>22</sup> The reliability test results confirmed that the tool was valid and reliable for assessing QoL in the sample of the study.

In relation to the QoL scores strictly speaking, in the Physical health domain, the mean score was 55.96 points. Considering that the scale can range from zero to 100 and that the higher the score the better the quality of life in the domain, the results reveal that the QoL-Physical health domain is relatively low and that this is probably due to the items "satisfaction with sleep" and "energy for everyday life". The responses for these items were negative: 64.8% were "dissatisfied" with sleep and 90.6% reported having "average, no, or very little energy". The number of respondents who chose these options may have contributed to the decreased overall mean of the domain.

The Physical health domain score of the sample is similar to a study conducted among graduates in training or professional enhancement in non-medical health courses using the WHOQOL-100 in a city in the state of São Paulo, which also had scores close to 60. <sup>23</sup> Although the study cited did not mention the working hours of the courses, it seems that educational activities in the area of health that involve practical internships contribute to tiredness or fatigue and sleep disorders.

The occurrence of common mental disorders (insomnia, fatigue, irritability, forgetfulness, difficulty concentrating and somatic complaints) is relevant among residents in the field of health. A study conducted among medical and non-medical residents found that symptoms were more intense among physicians, which suggests impaired quality of life of these young professionals.<sup>24</sup>

As for the Psychological domain assessed by the WHOQOL-BREF, the mean score was also relatively low, at 59.96 points. The questions from the domain are related to the presence of positive or negative feelings in regard to themselves and their lives, ability to concentrate and self-image. Worth noting are the options selected for the question "How often do you have negative feelings such as blue mood, despair, anxiety, depression?",

where 57.8% of the respondents chose the options "quite often", "very often" and "always". The "seldom" option was selected by 39.8%.

Around two-thirds of the residents considered that they enjoy life "not at all", "a little" or "a moderate amount". Ability to concentrate yielded similar results. Such results coming from a population of young people indicates that their daily lives have been difficult, and probably also impaired learning, considering the difficulty concentrating that most reported. Nevertheless, 40% were "satisfied" with themselves and 52% felt their lives are meaningful. A study conducted with medical residents24 and another one with nursing residents,25 both using the SF-36 (Medical Outcomes Study 36-Item Short-Form Health Survey), showed that the Mental health scores, which are similar to the Psychological domain of the WHOQOL-BREF, ranged from 44 to 56 points (score from zero-100). These results are close to those obtained in the present study (56.96), but do not coincide with those from a study carried out with the general population of healthy individuals in the South region of Brazil, where the mean was 78.32 in the domain. <sup>26</sup> Another study that concurred with the present study is one that assessed stress among multidisciplinary residents in a public institution, where it was noted that 48.65% of the respondents had high stress levels during the residency, demonstrating that the emotional aspect has an important impact on the lives of professionals. 27

The Social relationships domain had the highest mean score, with 62.76 points, even though the residents complained that they lacked time to engage in other activities unrelated to academic life. However, the score, albeit better, is still far from being considered good quality in the social aspect. The questions from this domain address topics on personal relationships, sex life and support from friends. Even though the "satisfied" option was chosen by most of the participants to classify these aspects of their lives, in the other questions ("satisfaction with their personal relationships - friends,

relatives, acquaintances, colleagues" and "satisfaction with their sex life"), the percentages were not 50%. The second most selected option was "very satisfied" in relation to support from friends, indicating that friendships developed among residents were the most positive item in the Social Relationships domain.

Comparing the score obtained in this study (62.76) with a study conducted with the general population (78.3), <sup>26</sup> social relationships were lower in the group of multidisciplinary residents. However, in a comparison of the mean scores of medical (56.25) and nursing (50) residents, the means of the multidisciplinary residents were relatively higher. <sup>24-25</sup> The higher score may be due to the closeness among professionals as a result of multidisciplinarity. Furthermore, being in constant contact for various hours during the day can be conducive to the formation of emotional and social bonds between them.

The Environment domain had the lowest score with a mean of 49.65 points. Considering that the study was conducted in São Paulo, a bustling metropolis, with high pollution and noise levels, high cost of living and violence, the results obtained in this domain were not surprising. The themes addressed are safety, physical environment and financial resources, which tended to generate negative responses, accounting for the low score of the domain. The worst response was in reference to climate, pollution, noise and attractiveness, with 39.8% of the residents selecting the options of "very little" or "more or less" in terms of the healthiness of their physical environment. Fifty percent of the responses for the item feeling of safety were "more or less". In relation to monetary satisfaction 53.5% indicated "average satisfaction" and 80% of the participants said they did not receive any assistance other than the program's scholarship. In terms of mobility, although most got around on foot (44.95%) or used public transportation (80.74%), 39.1% reported being satisfied with the means of transportation used.

This result (total score of 49.65 for the domain) is lower than that obtained in a study with graduates in training or professional enhancement (mean of 59.04), conducted in the state of São Paulo.<sup>23</sup> An analysis of this data suggests that in cities outside the capital, QoL related to the environment appears to be slightly more favorable.

The relatively low scores for all the domains reflect the general assessment of QoL (Question 1 from the WHOQOL-BREF), where only 32.8% considered it "good" or "very good" and the majority (35.9%) opted for "neither poor nor good". The same occurred with Question 2 "How satisfied are you with your health?", where "satisfied" and "dissatisfied" were 38.3% and 42.2%, respectively.

Although the number of respondents did not reflect the total resident population and represented only one institution among many others that offer multidisciplinary residency programs, the participants were from eight of the institution's 12 programs and corresponded to more than 50% of the residents of their respective programs. Therefore, the low QoL scores should be a matter of concern for coordinators, since apart from being detrimental to the life and health of residents, this situation can seriously impair academic performance and professional training, as well as constitute a safety risk for users/customers during the provision of care.

In view of these results, managers of health institutions with residency programs should be concerned about the health of their medical and multidisciplinary residents, since they are in direct contact with users and can undermine care quality.

With respect to coordinators and those in charge of programs, it is urgent that they deeply reflect on the feasibility of new strategies that can be implemented in the daily lives of residents, such as housing, facilities for meals and places for appropriate periods of rest, without changing the essence of the programs. From the time courses start, current and future residents can also be provided information on the resources offered by the

institutions to help them control their physical and mental health, such as receiving care in outpatient clinics that include residents

In addition, studies related to academic and professional life and QoL can provide input for health institutions and program coordinators to assess and plan activities that minimize possible negative repercussions in the day-to-day routine of the institution, including the professional performance of residents.

#### **CONCLUSION**

Multidisciplinary residents sleep less than the recommended amount for their age group and most feel they do not eat properly.

In relation to the quality of life of the multidisciplinary residents, the QoL scores measured by the WHOQOL-BREF are relatively low in all the domains, with the worst being Environment and Social relationships the best.

Although the study encompassed residents from different programs in the various areas of hospital care, the limitations of the present study are that it was conducted in just one university, dealing, therefore, with a particular reality. However, it must be considered that the number of programs and residents are significant and that in the overall context the situation is similar to various programs in the country that follow the general rules established by the Ministry of Education.

Therefore, given the implications for the daily lives of residents and their professional practice, these results are a concern, because they can undermine the quality of learning processes and the acquisition of competencies. At the same time, and equally relevant, since it involves a predominantly practical course, the safety and quality of care provided by residents to clients/patients could be impaired. For the institution and health systems, impaired performance of residents could harm the institution's image.

Last, the importance of the present study should be emphasized in light of the magnitude of the growth of multidisciplinary residency programs in the country. Whereas, as in the case of medical residents, on-the-job training enhances the technical competencies of the professionals, the intense wear and tear on physical and mental health can cause momentary and persistent harm that is difficult to control and needs to be evaluated. It is not acceptable, within the context of health, that the professionals who provide care do not receive due attention for their own health conditions that directly affect their quality of life.

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3 - Iveth Yamaguchi Whitaker

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