

## Females Education and Career Choice of Veterinary Medicine: Emergence of Life Stages Theory

Research Article

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### Abstract

Veterinary medicine has undergone a gender shift from being male-oriented to predominantly female. Currently, 75% of veterinary students are females which also reflect the applicant pool and will serve to inform the gender distribution of the profession. The gender transition in veterinary medicine has been described as a rapid feminization and is considered the most feminized of the comparable health professions. This manuscript examines the choice of females for their education and career in veterinary medicine. A life history interview of six female veterinary students was conducted to understand their experiences which resulted in the choice of veterinary medical education. Students were chosen from St. George's University, School of Veterinary Medicine in Grenada across different terms and years of training. The theoretical framework that served as the base for this thesis is grounded theory. From data collected, themes such as early interests and positive impressions of veterinarians and veterinary medicine from knowledge and experience were identified. Academic, personal and financial barriers and opportunities for gaining admission were also noted as common life experiences. A Life Stage Theory emerged to explain the students' choice of veterinary medicine. The proposed theory refer to the components of need, knowledge and experience, interest, decision and enrollment as having a specific time sequence and sociocultural and economic realities throughout the students' life histories.

**Keywords:** Education and Career Choice; Veterinary Medical Education; Life Stages Theory; Females in Education.

### Introduction

The topic of educational and career choices is an actively researched one. Various educational backgrounds and career choices have also been researched in different parts of the world. Specifically, there is work related to the increasing number of females in veterinary medicine and the factors that determined their choice of veterinary medical education. A review of available scholarly literature revealed gender-specific and socio-cultural life experiences as issues that can be correlated with an individual's choice of education and career. Analysis of the literature also revealed the following themes as representative of the scholarly body of knowledge related to this thesis:

- Females in Veterinary Medicine
- Role of Gender
- Education and Career Choices
- Determinants of Choice

- Life Experiences
- Theoretical Background

### Females in Veterinary Medicine

The gender transition in veterinary medicine has been described as a rapid feminization and is considered the most feminized of the comparable health professions [1]. The gender shift towards females in veterinary medicine has occurred at the levels of the applicant pool, entering classes and graduating classes. Among 694 veterinary medical school applications, with more than 75% being female, veterinary practice experience and animal ownership were identified as the main reasons towards their choice of veterinary medicine [2]. The practice of veterinary medicine has also fundamentally changed as a result of the increase presence of women in the profession. The increased number of women graduating into veterinary medicine has seen a small number entering food animal practice and more than 75% moving into small animal practice [3]. The focus on companion animal veterinary prac-

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tice has also led to a shift in educational and research programs with a consequential shortage in laboratory animal medicine, food animal practice and public health. Christopher and Marusic also referred to the research and clinical trends and priorities of the veterinary profession based on bibliometric data of scientific publications which also represents the focus on companion animal medicine [3].

The increase in female veterinary students is a reflection of the increasing interest in veterinary medicine by females. Miller in her thesis entitled "Man's Best Friend Trending Towards Women" recognized that the 75% women and 25% men average percentages for entering veterinary students in the US is a reflection of the percentages in the applicants pool [4]. Miller further assessed the percentage of practicing veterinarians that are over the age of 45 years which was found to be in favour of males [4]. This indicated that the gender transition which originated in the 1970s led to the stage today where the age profile of female veterinarians is lower than 45 years of age. The experiences of female veterinarians in the US is also experienced in Europe, as the UK's Royal College of Veterinary Surgery (R.C.V.S.) reported a 77% female population among their veterinary students [5]. The increasing number of women and decline in the number of men enrolling into veterinary schools is a trend that is recorded. The 'feminization' of veterinary medicine is discussed in the literature in terms of occupational sex segregation. Lincoln noted a reduction in male graduation at the undergraduate level and suggested that men chose to avoid career development dominated by women [6]. The role of decision making in pursuing veterinary medicine by females is also important to understanding the reasons for their preferred choice. The increase in female students in veterinary medicine is frequently explained in terms of higher female student graduation rates in high schools, better academic performances by females when compared to males and life experiences such as veterinary practice and pet ownership as consistent for female students.

### Role of Gender

Historically, gender inequity for women throughout the world is known especially as it relates to educational opportunities, occupational distribution and even the wage gap which still persists today. Institutionalized discrimination as part of a social inequity is manifested with gender inequalities across the world. The depth and breadth of gender inequality is acknowledged across many studies [7].

Females make up the majority of practicing veterinarians and this outnumbering of men is a fairly recent development [8]. With regards to overall occupational sex segregation, Stockdale and Nadler describe a progressive shift in attitudes towards the employment of women [9]. The gender shift in occupations is also being observed in the educational experiences of students. In particular, women are increasingly being represented in academia, including medicine and life sciences, which were traditionally male dominated. Bagillhole and White, in the book entitled "Generation and Gender in Academia" referred to the over-representation of women in academia, as women continue to gain higher education [10]. The gender presence of women in education is further discussed in terms of their greater ability than males in scholarly attainment. A pattern of gender differences in academic performance does exist. Wang, Eccles and Kenny noted in a study of math and verbal ability that females had a greater representation

of high ability than males [11]. Math and verbal ability is linked to the Science, Technology, Engineering and Mathematics (STEM) fields, which suggest that with higher abilities, females have greater access to employment and careers in STEM fields compared with males. The gender transition is being observed in the STEM careers linked to the increasing involvement of women in higher education. The presence of female professors creates a greater influence for female students to pursue science education and careers. The greater presence of females as educators informs the education choices and career paths for female students. In a study of college students enrolled in science and engineering courses, the views of professors as positive role models were automatically identified by female students regarding their female science professors [12]. The consequences of greater motivation and abilities by females are the deteriorating employment prospects for males, in particular, unskilled males. The increase in women's educational attainment and career growth and development was also observed in Germany where women found their first jobs faster than men [13]. A large difference in career paths was found among US college students where females were found to be more attracted to careers in health and medicine which occurred during their high school years [14]. The reported gender dynamic between male and female educational attainment is the observation for veterinary medicine.

Gender differences in career preferences was analyzed to be related to aspect based career preferences of income, teamwork, professional advancement and length of training [15]. Gati and Perez conducted a twenty year assessment of career guidance applications comparing those of 2010 with 1990 [15]. The career preference differences identified more women participated in career guidance and the differences in applications favoured women with career interests with a greater level of income and professional standing. The gender segregation noted by females and males in career preferences is noted in the workforce. Sex typed personality traits and gender identity in predicting sex typed careers was noted by Dinella, Fulcher and Weisgram to include gender typicality, contentment, pressure to conform and inter-group bias [16]. The sex typed traits derived from the study of men and women identified that gender was a determinant of career interest and gender was considered the strongest influence of career choice.

### Education and Career Choices

The first educational experience for a student bears a significant influence on their educational interests and choices. The development of education choices and those towards a career is considered to be part of the schooling process for students. The exposure of students in the classrooms provides the knowledge and interests for students to select their preferred educational and career pathway. Harrison et. al. noted a change in student interest as a result of classroom-based exposure to science and how it is practiced [17]. The progression that occurs between education, employment and career planning is one that may be a natural process but it is a relationship that is based on a systematic structure of the educational system. The emphasis on higher education additionally is limited to career paths, as it involves specific training for a career-relevant skills set. A longitudinal study of students that entered undergraduate training in the UK noted student's choice of institution, attitudes to money, career services and post-university employment experience to be related [18]. The learn-

ing environment that education provides can also correspond to career learning with the development of career interests and career competencies by students. Aspects of the learning environment of schooling is described by Kuijpers, Meijers and Grundy as involving career reflection, career forming and networking as observed among students aged 12-19 years in the Netherlands [19]. This research provided the educational and career choice relationship among students who were not in higher education. Education and through the process of schooling is an instrument for the acquisition of career competencies which students can use towards their career choice.

The career paths of STEM in particular seem to be closely connected with students' educational experiences. This thesis which explores female student's choice of veterinary medicine is part of the science career area that STEM covers. The relationship of STEM education and careers was studied by Xu who noted a positive career association between individuals occupation and their college majors [20]. The career outcome choice of students can be described as an extension of their educational experiences. Building on the influence of STEM related careers, the perceptions of careers is formed from the educational influences. A study by San Miguel et al., demonstrated the formation of perceptions by elementary school students about veterinarians after being exposed to a veterinary medicine activity book [21]. The students' depictions of veterinarians were altered by the use of educational materials in the classroom. The role of education at all levels of schooling demonstrates a pathway to careers based on the influences, perceptions and knowledge that is gained. However, the progression of students from educational focal points to relevant career paths did not apply to everyone. For students, the question may be based on availability of employment opportunities after graduating from school. The matching of education, career and the labour market is an important consideration in explaining the role of education and career choices. For some students, the demands of the labour market drive their education and career paths. Other students enter into the labour market at times disconnected from their educational experiences. The alignment of career aspirations with the actual, current and future demands of the British labour market was explained [22]. The results of the review among British students identified a misalignment in the ambitions and availability of realistic employment. The result is a rough school to work transition that disqualifies the linkage between education and career within the limits of the job market availability and accessibility.

### Determinants of Choice

One of the main tasks of this thesis was to explore the life history of female veterinary students to identify any influences or reasons for their choice of veterinary medical education. The established interconnectedness between education and career suggests that what motivates one would influence the other. Based on analysis using a range of attitude questions, career orientation and social orientation were identified as relevant to educational choices [23]. The implications of career and social orientations refer to students applying an identity to their career interest and choice. The issue of identifying a particular choice of career for a student is derived from knowledge and understanding of persons who are in the particular careers of interest. The influences of significant persons in students' lives are documented as a source of inspiration. Sjaastad reported students descriptions of parents and

teachers as their influences in STEM related educational choices [24].

The choice of level and nature of education attained is also influenced by the socio-economic status of persons. Gitonga noted the influence of socio-economic status in determining the education and career choices in particular for women in Kenya [25]. The social context of career choice is an important component for students around the world and for different career paths. A longitudinal study of STEM tertiary students in Denmark identified a series of interacting sets of values, interests, identity and orientations towards the directions of the students' education and careers [26]. The interacting factors noted in the Denmark study suggest that multiple factors along the social context of students' lives are involved in informing students' choices for their education and careers. One theory that incorporates the multiple social factors identified in the choice of education and career is the Social Cognitive Career Theory (SCCT). SCCT which examines the relationships between contextual (social class, learning experiences, proximal support and barriers) and person cognitive (self efficacy, outcome expectations, interests, goals) factors found both to be related for students with math and science career goals [27]. The behavioural aspect of educational and career choices was also identified as an interaction of various social and individual characteristics. The reality however with regards to veterinary medical education for students is the barrier of high cost of education. Lack of access to personal financial resources and reducing governmental and private investments into veterinary education and research creates a barrier for students even after making the choice of veterinary medicine for their education and career [28]. The financial disincentive for students to pursue veterinary medicine is however tempered by viable repayment options with income and employment opportunities for veterinarians.

### Life Experiences

The early interest for students in science suggests a family influence in parental occupation as a primary source [29]. Parent's occupations served as the initial influence in their pursuit of science education and careers. Extending beyond the parental and family aspects of students life experiences is that of the community realities and the identities associated with culture and ethnic beliefs. With regards to female students, these ethnic and cultural traditions remain strong in their life experiences. A study that investigated the background of adolescent girls towards their career planning recognized gender-based traditions of career choice and aspired educational level to contribute the most [30]. The traditions associated with gender are a result of ethnically derived roles and positions in a particular society. A high school survey noted boys who responded in Spanish reported more likely to work full time and not plan continued education as opposed to those who responded in English and planned to work part time while continuing their education [31]. The issue of being Latino and male reduced the likelihood for the young male students to aspire towards higher education. The experience of the Latino culture and ethnic identity in the US is one of a growing minority population that is disproportionately affected by socio-economic disparities compared to the Caucasian ethnic group. The life experiences of the young male Latino high school students project their post-high school experiences to be work related and income earning rather than the ambitions of higher education and professional career opportunities.

The African American ethnic group represents another disproportionately affected population group in the US society through socio-economic disparities. A further dissection into the African American community reveals the social reality of single-mother families. A study of seventh and eight grade children from African American single mother families showed for boys the understanding that they need to pursue labour work and for girls the need to work hard in school [32]. The perception among African American adolescents from single mother homes is that they need to work harder than their Anglo-American counterparts who create a disparity in how these students approach choices in education and careers. The perception of being less than qualified reduces the need for high levels of education and career attainment for these students.

There are also an increasing number of ethnic migrants from across the world into developed countries of North America and Europe. One study explored the experiences of skilled ethnic migrant workers in France and Germany which revealed a high level of similar skill and common career choices and outcomes of the particular ethnic community [33]. The experience of persons within an ethnic community also forms part of the life experiences that influences the outcomes of educational attainment and career paths. The life experiences of students based on their family, gender, ethnic, cultural and economic context are relevant environmental factors that influence career choices. Data from a survey of 1600 independent professionals in the Netherlands in combination with 51 in-depth interviews concluded that the external environment in the lives of these professionals was the most important factor that determined their career success [34]. This study underscored the relationship between person's life experiences with their environment and how that informs the educational, career choices and the success of the choices.

### Theoretical Background

There are several theories related to the social and cultural aspects of education and career choices that are considered in this thesis. These theories include childhood development theory, historical, political and economic considerations and Bourdieu's habitus.

Hartung, Porfelli and Vondracek, as part of a childhood development theory, suggest middle childhood in the early teenage years as being the beginning stage of vocational development [35]. The term "vocational identity" as a concept was developed by Hartung, Porfelli and Vondracek where personal identity is related to work and by extension the choices made to pursue the work [35]. This concept is supported by Erickson and Vondracek [36, 37]. "Vocational Identity" can be regarded as the applied process in childhood which supports making education and career decisions.

A historical context suggests that changing economic and political practices in society would also change the opportunities that exist for training and education towards particular employment. Dumont and Carson noted an adjustment of career opportunities in the US with a shift from agricultural based activities to manufacturing and industrialization [38]. This change represented an economic and political change towards urbanization, creating different educational and career opportunities. Connected to political considerations for education and career opportunities is the economic position of a country or a political alliance. The social

needs, political directive and economic position of a country are therefore inter-related factors that result in different outcomes in terms of opportunities for education and career development. The converse can also be the case, when due to unfavourable socio-economic and political situations the educational and career opportunities may be limited.

The concept of habitus relates to the common practices of persons based on their experiences in the society to which they belong. In the context of education and career choice, habitus relates to the experiences of others in the community and the education and career informed choices made by others [39]. Bourdieu, in the discussion on habitus, describes the involvement of family and society as significant and explains the influence of society and culture as persons reflect the practices, values, beliefs and behaviours of those around them [39]. Critiquing Bourdieu's habitus, Reay referred to the practice of higher education by middle class families as an influenced action from the experience of family members [40]. Bourdieu himself commented on the interplay between society and individual processes and added that both are shaped by life history events which ultimately influence current interests and choice [40]. Bourdieu's primary thinking included the concepts of practice, habitus and social fields which Rawolle and Lingard referred to as 'Bourdieu's conceptual triad' [41]. The practice referred to by Bourdieu related to the everyday lives of people be it meal customs, marriage strategies or other customs. The habitus is described as a predisposition towards a choice or behaviour based on predefined rationale on the account of practice. The third part of Bourdieu's conceptual framework refers to social fields which describes the interaction of practice and habitus in a given environment. Bourdieu's concepts therefore offer thinking tools for researching and understanding the education and career choices of female students towards veterinary medicine.

The theoretical backgrounds referred to childhood personality and characteristics, historical, political and economic factors and socio-cultural values, beliefs and practices in a family and the community as factors that determine the choice of education and career development. The individual and societal interplay that are suggested by the various theories recognize the complexity that exists in identifying factors towards education and career choices.

### Methodology

"Is there a specific age when you chose to pursue veterinary medicine?,  
What were your childhood impressions and that you hold of veterinarians?,  
What opportunities were presented to you that influenced your choice of veterinary medicine?"

The questions noted above underpin the enquiry regarding the choice of the veterinary medicine by female students. To respond to these questions, students were required to recall their past and explain the significance of events in the choice of veterinary medical education. This methodological approach is often defined as a life history approach, and for this study was a natural one, as it allowed for the exploration of past experiences in students' lives. A female veterinary student was chosen from each of the six academic terms of the Doctor of Veterinary Medicine (DVM) academic program that is delivered at the Grenada campus of S.G.U.

Each of the six female veterinary students were selected through a referral process, including recommendations from student class representatives as well as consultations with faculty members prior to identifying students to consider for participating in this study.

The methodology employed for this study explored the following areas:

1. Description of Life History
2. Application of Life History in Education Research
3. Theoretical Framework: Grounded theory
4. Discussion on the Methodology used to conduct this Research
5. A synopsis of My Experiences during the Research Process
6. Data Recording and Analysis
7. Description of Scenes

### Description of Life History Research

Life history as an approach to research is suggested by Monchery who cited Sikes as credited to the German philosopher Wilhelm Dilthey (1833-1911) in his recognition of the significance of life history for making sense of human experience and social life [42]. Cohen et al referred to the work of Thomas and Znaniecki (1918), "The Polish Peasant in Europe and America" as the use life history to present an account of the life of Wladek Wisniewski in the work published [43]. One may even consider the ancient records on tombs, caves and pyramids to represent life history work as Richardson noted in pointing out that life history have always been part of the recordings of humankind [44].

Life history as a research methodology is increasingly being recognized for its approach as it provides a rich source of data, not only to explore life experiences but also one that enables the examination of relationships between causes and effect [46]. Chase observed many researchers used the life history and life story terms interchangeably [47]. The life history approach adopted was described by Ojermark who had developed his ideas from the work of Hatch and Wisniewski's (1995) "Life History and Narrative", Denzin's (1989) "Interpretive Biography" and Roberts (2002) "Biographical Research" to describe life history research as:

"... An account of a life based on interviews and conversations. This life history is based on the collection of a written or transcribed or oral account requested by a researcher. The information is subsequently edited, interpreted and presented in one of a number of ways, often in conjunction with other source. Life history maybe typical, focusing on only one segmented portion of a life, or complete, attempting to tell the full details of a life as it is recollected" [48].

### Application of Life History in Education

Ojermark described life history research applications to include areas such as family studies, migration, political change and education [48]. Some specific applications to educational research include the impact of migration on the educational pursuits of immigrant families, the philosophy of political action as it relates to the educational experiences for vulnerable groups in society and even the relationships between cultural practices and education and career choices according to [48]. Sikes noted that auto/bio-

graphical research, which can be included in the life history methodology, became prominent in a seminar series hosted by British Educational Research Association (BERA), which highlighted the use of the approach among educational researchers [49]. Sikes also mentioned that teaching and learning involves people with histories and experiences who hold beliefs and values, as well as identities, all of which interact and are relevant.

Life history research in education has also contributed significantly to the understanding of overall educational experiences. Goodson emphasized how the life history approach can make a contribution to the development of teachers' professional knowledge and practice [50]. This can be achieved by connecting the social structures, processes and relationships which exist as part of their educational environment with their overall experience in life. Generally speaking, Goodson holds the position that research involving life history of educators makes an important contribution to how they develop professionally, as well as, to affect the nature of their experiences in schools [50]. In the same token, connecting female students' life experiences to the wider social structures, processes and relationships can allow life history to determine how they choose veterinary medicine for their professional development.

### Theoretical Framework: Grounded Theory

The theoretical framework that served as the base for this thesis is grounded theory. The research outcome was an understanding about how female veterinary students, through their life experiences, choose to pursue veterinary medicine for their education and career development. As part of the effort, the interviews sort to determine what life events and social realities were identified as significant influences in these students' choice of veterinary medicine. The exploration of student's lives was followed by a critical analysis to conclude a theoretical position. Glaser and Strauss as the developers of grounded theory suggest that an iterative, purposive and systematic analysis of data is required to explain social processes and interactions [51]. Corbin defines grounded theory as:

a theory generating research methodology" [52].

The outcome of the research using the grounded theory as reported by Corbin is:

"... an integrated formulation that gives understanding about how persons or organizations or communities experience and respond to events that occur" [52].

Charmaz further suggests that the generation of theory is not only a reconstruction of events, but also involves a co-construction between the researcher and the participant [53]. The theory is therefore constructed from the data gathered by the interactions between the researcher and the participant. Grounded theory is relevant to life history methodology as the theory is based on qualitative research through interactions and interpretations from discussions with people which the life history approach allows for.

In the development of grounded theory, Corbin propose concept identification as the first step which is identified at the first interview [52]. At the first exposure to a research participant, life experiences and events shared may inform future enquiries on the part

of the researcher. A critical characteristic of the grounded theory described by Strauss and Corbin is the need for the researcher to interact with the data and identify as many dimensions of the data collected [54]. A further development of grounded theory is data reduction [52]. Corbin explained that the researcher should represent the data by a “manageable number of relevant categories” or data reduction. The data reduction involves reducing the identified concepts and categories which is described as “selective coding” [52]. The main purpose of selective coding is to represent the various concepts with a common construct that reflects the many possible descriptions and explanations from the collected data. Category saturation is an additional feature of grounded theory that was applied in this study to identify common concepts from the various dimensions and relationships between interviews with students.

## Results and Discussion

The data that emerged from the interviews were presented in the categories of life history chronology, age of choice for veterinary medicine, impressions of veterinarians, female veterinarians as role models, female student’s academic record, barriers and op-

portunities for female veterinary medicine and extraneous experiences. For each of the categories presented, themes emerged such as early interests and positive impressions of veterinarians and veterinary medicine from knowledge and experience. Academic, personal and financial barriers and opportunities for gaining admission into S.G.U.’s veterinary school were also noted. All of these categories of data and the themes that emerged served as influences for the student’s interest and choice of veterinary medicine for their study. A summary of themes and its distribution among the students is noted in Table 1.

Life histories of the six students included commonalities and differences. The most common experiences for the students are their pet ownership and animal care history, educational pursuit of veterinary medicine, positive views and opinions of veterinarians and about S.G.U. and experiences of barriers and opportunities that led them to veterinary medicine. The differences were in the student’s life experiences which formed part of each student’s unique personal, family, socio-economic, cultural, geographic and overall environment. The differences while being unique for each student also had similar and consistent themes and outcome of veterinary medical education as part of their life experiences.

**Table 1. Distribution of Emerged Themes from Student Interviews.**

| Themes  | Response |
|---|----------|
| First recall of life experience involved pet                        | 2/6      |
| Early age of interest in veterinary medicine                        | 3/6      |
| School performance was average                                      | 3/6      |
| Excelled in school  | 3/6      |
| Attend to personal pet care   | 2/6      |
| Tragic experiences with pet   | 2/6      |
| Cared for animals other than pets                                   | 5/6      |
| Worked in a veterinary clinic                                       | 4/6      |
| Worked in other settings of animal care                             | 1/6      |
| Had academic difficulty in undergraduate education                  | 3/6      |
| Had difficulty with unsuccessful applications to veterinary schools | 4/6      |
| Received rejection from applications                                | 4/6      |
| Spent time (two or more years) seek veterinary enrolment            | 4/6      |
| Gave up on pursuing veterinary medical education                    | 2/6      |
| Personal relationship with veterinarian(s)                          | 4/6      |
| Positive impressions of veterinarians                               | 6/6      |
| Interest in the practice of veterinary medicine                     | 4/6      |
| Admiration of female veterinarians                                  | 4/6      |
| Admiration of male veterinarians                                    | 3/6      |
| Consider female students perform better than males                  | 5/6      |
| Academic barriers to admission                                      | 2/6      |
| Financial barriers to admissions                                    | 3/6      |
| Personal barriers to admission                                      | 2/6      |
| Academic opportunities for enrolment                                | 6/6      |
| Financial opportunities for enrolment                               | 3/6      |
| Personal opportunities for enrolment                                | 5/6      |
| Completed SGU pre-veterinary program                                | 3/6      |
| Followed career path of parents                                     | 1/6      |
| Followed career ambitions of parents                                | 4/6      |

The themes and factors that emerged from an analysis of the data through coding and clustering of the data presented from a temporal sequence included the following five components:

**1. Need:** The choice of veterinary medicine by the students had its genesis in a specific need on the part of each student. The needs included personal desire on the part of students towards veterinary medicine and the care for animals. The personal aspects of the students need also contained a family oriented component as an influence. Other aspects of students needs included financial in terms of affordability of the study of veterinary medicine, desirability to become veterinarians as well as the socio-economic level of each student and their families. There was also an academic aspect of the students' needs in terms of matching academic performances to enrol into and pursue veterinary medicine.

**2. Knowledge and Experience with Veterinary Medicine:** The students demonstrated varying degrees of knowledge and experience towards veterinary medicine. Exposure to veterinary medicine was an essential part for each student's knowledge and experience to make a choice to pursue it. The impressions of students towards veterinarians and veterinary medicine as a career also served to inform the students' knowledge and experience.

**3. Interest:** Interest towards veterinary medicine was another essential requirement for each student to first possess. Maintenance of this interest over time allowed the student to progress towards the choice to pursue veterinary medicine.

**4. Decision:** The decision to pursue veterinary medicine was the result of the interactions among needs, knowledge, and experience of veterinary medicine and the interests of students. The interaction among the components produced the choice of veterinary medicine by the students and enrolment.

**5. Enrolment:** The decision to pursue veterinary medicine was the culminating stage for each student. However, there was a gap between the choice to pursue veterinary medical education and the enrolment of the students into their veterinary program. En-

rolment was the final stage towards the student presence in veterinary medicine. Personal financial and academic factors interacted to progress the students decision towards enrolment.

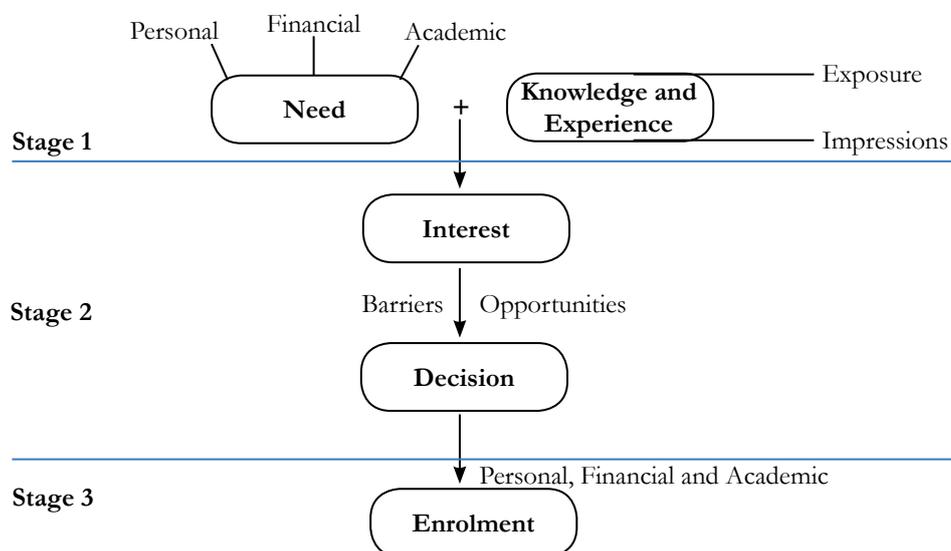
The components of need, knowledge and experience, interest, decision and enrolment are the components of each student's life history experiences. The interacting factors of personal, financial and academic characteristics served as the influences to the need. These interacting factors were within the socio-cultural and economic context as environmental realities towards the students' choice of veterinary medicine. Each of the described components is required towards the choice and enrolment and represents a multi-stage and temporally sequenced interaction. I described the interactions as the Life Stages Theory for the students' which determined their choice of veterinary medicine.

**Life Stages Theory**

The Life Stage Theory refer to the components of need, knowledge and experience, interest, decision and enrolment as having a specific time sequence and socio-cultural and economic realities throughout the students' life histories. For the decision towards and enrolment into veterinary medicine to occur, there is a temporal chronologic sequence as shown in Figure 1 (Place Figure 1 here).

Stage 1 of the Life Stages Theory includes the components of needs and knowledge and experience. Generally, the components of stage 1 occur at an early age as the component of need reflected the personal and family-oriented influences on the students. Linked to the personal and family influences were the financial and academic aspects of the needs component. The personal needs included a desire to care for their personal pets. Other students needs was their interest to escape family structured expectations which did not meet with their own projected aspirations. Further identified needs included satisfying their family obligations to improve socio-economic standing. Collectively, the students all had a need to pursue academic performance at a higher education level. The need for higher education was also influenced by the factors of family expectations which each student accepted as their own

**Figure 1. Life Stages Theory.**



personal expectations as well.

The need component is consistent for all the students and serves as the genesis of the Life Stages Theory towards their choice and enrolment into veterinary medicine. The needs of each student were also a result of the socio-cultural, economic and academic influences that created the needs for the students. The needs were also a part of the growing up process in the life history of the students. Based on the experiences of each student and their socio-cultural, economic and academic realities, different needs of the students were expressed.

The second component of stage 1 is the knowledge and experience of the students with relation to veterinary medicine. The knowledge and experience component, like the needs component, is a process that occurs during the developmental part of the students' lives. Exposure of the students to veterinary medicine, and by extension to veterinarians, informed their knowledge and experience. In addition, the students' consistent positive impressions of veterinarians as part of their knowledge and experiences were influential factors. The students' varying experiences included the care of their pet dogs growing up, working and experiencing a veterinary clinic and learning about the veterinary profession as part of the process towards making their choice of veterinary medical education. The overall positive impressions of students towards veterinarians were influential based on their respective knowledge and experience related to veterinary medicine.

The needs, knowledge and experience components in stage 1 of the Life Stages Theory, suggests to interact with each other. Students' needs, matched with their knowledge and experience of veterinary medicine. The matching of the students' needs, knowledge and experience was based on the students identifying characteristics of veterinary medicine from their knowledge and experience, in order to satisfy their particular personal, financial, and academic needs. The match between veterinary medicine as a mechanism to care for the animals was also met. The knowledge of financial benefits from a career in veterinary medicine further matched the needs for sustainability and upward socio-economic mobility. Interactions between the students' needs and their knowledge and experiences of veterinary medicine served to create a compatibility of the students with veterinary medicine. This compatibility established the interest for the students towards veterinary medicine, which is stage 2 of the Life Stages Theory.

Stage 2 of the Life Stages Theory relates to the students' interest in veterinary medicine. Stage 2 for the students, as well as its component of interest in veterinary medicine, came after the needs, knowledge and experience interactions of stage 1. Stage 2 and students' interest therefore, occurred at a later stage in the life history of the student. However, this later stage is not in the context of the ages of the students, but rather in the chronological sequence of events.

The transition from stage 1 to stage 2 suggests a relatively short period of time between when needs, knowledge and experience occur. The progression through stage 2 of interest varies in length on the way to the decision component. The influential factors of stage 2 were the experiences of the students to maintain their interest in veterinary medicine. The influences of stage 2 to maintain interests were the continued exposure the students had to veterinary medicine, the continued identification by the students

of personal, financial and academic characteristics of veterinary medicine to meet their needs and addressing the barriers and presentation of opportunities for the students to decide to pursue veterinary medicine.

The influences of barriers and opportunities as consistent experiences of the students were critical experiences in stage 2. Having expressed an interest in veterinary medicine, the students faced personal, financial, and academic barriers that challenged the transition of their interests to decision. The consideration of barriers in stage 2 at the point of interest was the pivot towards the students' successful progression towards decision and enrolment into veterinary medicine.

Another component of stage 2 is the decision making event where the students transferred their interest to choice of veterinary medicine. In the context of time, there may be a point to distinguish between the interest and decision to pursue veterinary medicine. Interest and decision was divided into separate components for stage 2 of the Life Stages Theory due to the fact that in the life histories of the students there was a significant lag between their interest and their decision to pursue veterinary medicine. Opportunities served to overcome barriers which were an important part of the process which transitioned the students' interest to their decision to pursue veterinary medicine.

Stage 3 of the Life Stages Theory relates to the final experience of the students, which was matriculating into veterinary school after making their decision to pursue veterinary medicine. The period of time between the decision-making and enrolment into veterinary medicine varied from several years for students to within one year. The main influences for the students in their enrolment in veterinary school were academic opportunities in the form of the pre-veterinary program at S.G.U., as well as the availability of scholarships and financial aid. S.G.U. featured prominently in the students' experiences during stage 3 of the Life Stages Theory which led to enrolment at S.G.U. However, the enrolment stage for the Life Stages Theory remains relevant beyond the context of S.G.U. as the students generally experienced a gap of two to four years prior to enrolment into a veterinary program. The components and time frame of the Life Stages Theory reflects on the life experiences of the students and the timeline of the various influences which resulted in the choice of enrolment of the students into veterinary medicine. Implicit in the Life Stages Theory is the linkages between different periods in the students' lives and the socio-cultural, economic, and academic realities that occurred in their respective life experiences.

In the review of other theories on career choices, relationships can be drawn to the Life Stages Theory. The childhood development theory by Hartung, Porfeli and Vondracek relates to the need, knowledge and experience components of stage 1 of the Life Stages Theory which generally was part of the student's development experiences [35]. The identification of needs and the matching of characteristics, occur at an early stage in the lives of students as described by the childhood development theory. The concept of vocational identity from Erickson and Vondracek was also noted in stage 2 of the Life Stages Theory [36, 37]. The Life Stages Theory explains the sequences of events that formed the life history of the students which led to their decision and enrolment into veterinary medicine. The theory was constructed through the data collection, analysis, and application to the stu-

dents' life histories towards their choice of veterinary medical education.

## Conclusion

This study which identified reasons for female students' choice of veterinary medicine was a diverse one. The diversity of life experiences provided unique life histories for each student which resulted in individual idiosyncrasies of reasons for their respective choice. The individual differences while noted was also placed in context of similarities within diverse life histories for each student. Consistent experiences such as pet ownership, positive perceptions of veterinarians and veterinary medicine, expressed interest in pursuing veterinary medicine together with personal, academic and financial barriers accompanied by opportunities emerged as comparable themes across the respective students' life experiences.

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