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## Problems Faced by Female Doctoral Students in a University Setting: Findings from a Focus-Group Study

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*Abstract: Twenty-four doctoral students who participated in four focus-group discussion sessions are the focal point of this paper. Ten were doctoral students in Humanities, Social Sciences, and Health sciences and fourteen in Engineering and Life sciences. They were asked about their experiences in the university, difficulties, advantages, conflicts, their support system, and what they need in order to succeed in academia. Findings suggest that there are common advantages to being a doctoral female student as well as difficulties and barriers to success. Advantages include: the ability to work in an interesting field, the ability to invest time for research, and personal development. The main problems raised by the participants were: financial difficulties resulting from meager academic scholarships, and on-going conflicts between the demands of their academic work and family life (motherhood, in particular), and insufficient recognition of specific needs related to their female status (e.g., childbearing and nursing time). Other difficulties were: difficulties in competing in male-oriented surroundings, loneliness, lack of a support system within the university setting, and an insecure professional future. The participants emphasized that the ways to assist them and encourage their academic progress are not through counseling and support groups, but rather through real assistance in the form of financial incentives (e.g. elevated scholarships), university regulations (e.g., extra time for a student who has a new child), and the establishment of an information center.*

Keywords: Gender, Women, Inequality, Academic Life, University and Doctoral Studies

**R**ECENT FIGURES AND data regarding women in the academia are disquieting. These include:

- Although the same number of women and men receive a doctoral degree in life sciences, only 15-20% of tenured positions are held by women (Gannon, 2007).
- Even though women in the comprise about 45% of the post-doctoral positions in the biomedical sciences at academic institutions, much lower proportions secure faculty positions. In fact, overall, in universities and research institutions in the US and in Europe the proportion of women in the higher ranks of the academia is alarmingly small (EU, 2006; Martinez et al., 2007; Nelson, 2005; NSF, 2004, 2006).
- Although more than 50% of the European student population is female, women secure less than 15% of full professorships (EU, 2006; Ledin, Bornmann, Gannon, & Wallon, 2007).
- The shift from postdoctoral fellow to faculty is a stage during which many women leave academia (Martinez et al., 2007).
- While some analysts expect this gender gap in academia to close over time, though it will take many years to reach equality --others suggest

that this gap will remain constant due to the lower success rate of women at every step up the career ladder (Ledin, Bornmann, Gannon, & Wallon, 2007).

What factors may contribute to this inadequate condition? Women tend to withdraw from the general workforce due to two main factors: family demands and low self-confidence (Hoonakler & Schoepke, 2005; Kirchmeyer, 2006; Martinez et al., 2007; Mason & Goulden, 2004; Sears, 2003). Similarly, in academia, a recent study showed that many female postdoctoral fellows at the US National Institutes of Health had already lowered their career dreams: more than two-thirds of the men but only one-half of the women were thinking about a Principle-Investigator position (PI); among all fellows, those who were married with children were the least likely to consider becoming a PI; and within this group (married with children) women were less ambitious than men to secure a position of a PI (Martinez et al., 2007).

In order to detect factors that discourage women from seeking a PI position, Martinez and her colleagues (2007) asked their respondents to rank 15 factors that impact their decision regarding a PI track. They found no significant gender differences regarding factors such as managerial duties, competition,



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or the need to obtain tenure. However, salary was significantly more important to men than to women. Moreover, a significantly larger proportion of women than men rated factors related to children, spending time with children, and spending time with family members as extremely or very important to their decision making process. For example, while 21% of the women reported the wish to have children or more of them as a factor affecting their decision about career, only 7% of the men was affected by this wish. Overall, the findings suggest that women were more likely than men to anticipate family obligations as a potential source of conflict with their future career.

The different realities of the female and male respondents are also noteworthy. That is, women tended to enjoy less supportive conditions regarding family responsibilities than men. For example, 51% of married men and 83% of married women had a spouse who worked 40 hours or more per week; 36% of men and 8% of women had a spouse who did not work outside the home. More disturbing, 42.5% of men had a spouse or a relative to care for their children during the day, but only 15.5% of women had a similar advantage; 71.5% of men and just 25% of women had a spouse or relative who took care of children after school; 31% of married women stated that they would make changes to accommodate their husband's career, but only 21% of the men would do the same for the sake of their wife's professional life. Thus, it was not surprising to find that vital factors reported by women as making a PI position more desirable were affordable child care, work located near their spouse's job, and the possibility of working flexible hours (Martinez et al., 2007).

As recalled, the second factor affecting women in the work force is self confidence. In Martinez and her colleagues study (2007) a similar trend was found: although there was no gender difference in self-assessment of professional skills, more than 59% of the male respondents but only 40% of the female respondents were confident that they would obtain a PI position. Similarly, 55% of men and only 43% of women were confident that they would reach tenure. The authors conclude that: "Whether this lower confidence originates from foreseen future challenges that affect women more than men – such as childbearing, child care and/or less favorable professional environment – or whether they indicate that women underestimate their professional ability, it is an important question that requires further study" (Martinez et al., 2007: p. 979).

The results of another recent study (Ledin, Bornmann, Gannon, & Wallon, 2007) also show that traditional gender roles hold back female scientists. In a survey conducted among the applicants for the European Molecular Biology Organization's

(EMBO) Long-term fellowships (LFTs) from 1998, findings showed that while 80% of the respondents were working in academia, 75% of the men and only 60% of the women held high-ranking positions. Moreover, women were more likely than men to adjust their own professional development to suit their partners; they were more likely to move due to their partner's career; women with children who worked full time were also likely to have partners who worked more than 46 hours per week; and women were more likely to earn less than 50% of the family income. Similar trends were found in another survey among applicants of the EMBO fellowships programs from 2006: more women than men had moved to facilitate their partner's careers; worked fewer hours than their partners; and earned a smaller percentage of the family income. The authors concluded that: "even at the PhD level, women already balance career and family commitments, and this presumably affects their research" (Ledin, Bornmann, Gannon, & Wallon, 2007; p. 984). Unfortunately, the researchers found that these trends continue later on in the career ladder: women more frequently put their own careers in lower priority than that of their partners: they are more likely to move to suit their partner's careers; to take on the majority of child care responsibilities; and thus work less hours in research and writing. These factors, the authors conclude, explain why the careers of women do not progress at the same rate as those of men – that is why women tend to produce fewer scientific papers than men, particularly during their decade of professional activity (Symonds et al., 2006): "because women on average have less time available at work and have a greater burden to carry outside the laboratory" (Ledin, Bornmann, Gannon, & Wallon, 2007; p. 986).

In this study, among doctoral students in Israel, we further explore, already at this early stage of their careers, the factors that enhance professional development among the participants and those that delay or even prevent such progress – as perceived by the respondents. Hoping that understanding the difficulties and the dilemmas faced by women at academic institutions will facilitate policies and programs that may assist women to be fully integrated in the academic world.

## Method

### Sample

Twenty-four doctoral students who participated in four focus-group discussion sessions are the focal point of this paper. 10 were doctoral students in Humanities, Social Sciences, and Health sciences and 14 in Engineering and Life Sciences. They were between 22 – 36 years of age. 14 were married (of

those 8 had children), 9 were single, and 1 was divorced. The majority of the students received a university scholarship; nonetheless most of them also worked (in the university and/or outside the institution) because their scholarship was insufficient.

### **Data Collection**

We used the method of focus groups to collect the data (Krueger & Casey, 2000; Stewart, Shamdasani, & Rook, 2007). Data collection among the engineering and life sciences students was as follows: During March 2007 we circulated an open invitation for doctoral students to join our project, explaining that we were collecting information in order to learn how to assist doctoral students at our university. 17 students consented, but only 14 actually participated in focus groups that were conducted during June 2007 (3 were too busy at the lab and could not participate). Each group lasted for 2 hours, and was facilitated by a trained social worker (first group = 4 students, second = 4 students, and third group = 6 students). At the beginning of each meeting, the students filled out an anonymous questionnaire about their basic socio-demographic characteristics, and were asked to write their responses to three questions, in preparation for the discussion: advantages of being a doctoral student; problems in being a doctoral student; and possible solutions to these problems. Then, a discussion about the following topics was facilitated: the experience of being a doctoral student at our university; difficulties, barriers, and problems that I faced; issues of gender and motherhood related to my academic development; potential solutions.

The data for the Humanities, Social Sciences, and Health sciences students was collected during June 2007, following an open invitation to all to join our project, in one meeting in which all 10 students had participated. Similar topics as those described above were discussed.

### **Data Analysis**

Data was transcribed and analyzed using qualitative methods. Analytic induction and constant comparison strategies were utilized in order to detect patterns of strategies, resources, and interactions within the group. Analytic induction is carried out by scanning data for common themes, developing categories, and combining the categories into typologies (Goetz & LeCompte, 1984). Constant comparison involves combining inductive categories with a simultaneous comparison of all observed cases (Glasser & Strauss, 1967). Specifically, the researchers read through all the transcribed material with the objective of identifying common themes; 2) the themes were coded; 3) data were searched for similar instances of the same phenomenon, so categories could be identified;

4) a constant comparison was conducted by comparing all interviews with one another; and 5) data was translated into working hypotheses that were refined continuously until all instances of contradictions, similarities and differences were explained (Carey, 1994; Morgan, 1997).

### **Ethical Considerations**

A central issue in qualitative research is the need to protect the rights and the confidentiality of the participants, particularly since there is an open discussion about opinions and private matters between the researcher and the group. Thus, special efforts were made to conceal the identity of the participants. Further, we got the permission of each doctoral student to publish the study's findings, provided we insured confidentiality.

### **Findings**

#### ***On the Advantages of being a Doctoral Student***

The main advantages denoted by many of the participant were the freedom to devote time to interesting research areas, which does not always exist the private market, and the possibility of developing their own personalities, unique way of thinking and creativity. Another advantage that was mentioned by some women was the flexible schedule and the opportunity to be independent of "bosses." The metaphor was that of a greenhouse that to a certain degree, protects its habitats before they leave home.

#### ***Freedom to Create and Develop***

One woman said: "I like to study and devote time to what interests me, it easier here than in industry." Another added: "I have an option for profound learning, to speak a different voice inside the academia that is so masculine." A third one stated: "The main advantage is the interest; the possibility to develop ideas that may one day help others; an option to develop myself, to be creative." A fourth woman said "In my doctoral studies I have freedom. I have a supervisor who allows me freedom of thought and freedom to create, and any idea that I bring – he will advance. I have full support, and this can happen only at the university but not in industry." And the last woman stated: "There is an advantage to being a student until the age of 30-40; you are responsible for your own time. This is my choice, and this is what interests me, and this is what I like to do, and I am committed to my decision. No one will say 'come and do it.' I have to get the motivation and the will power by myself. It is between me and myself."

### ***Flexible Schedule***

One woman said: "...it is not the job of a robot, working hours are flexible, and sometimes you can work from home." Another one stated: "...working alone without a boss." A third one said: "having flexible hours..." And a last one asserted: "...I am my own master."

### ***On the Disadvantages of being a Doctoral Student***

The main problems that the women discussed in the groups were: financial difficulties resulting from the meager academic scholarships, and on-going conflicts between the demands of their academic work and family life (motherhood, in particular), and insufficient recognition of specific needs related to their female status (e.g., childbearing and nursing time). Other difficulties included: competing in a male-oriented environment, loneliness and a lack of support system within the university setting, and an insecure professional future.

### ***Financial Difficulties***

Many participants complained about financial instability and difficulties as research students. They are dependent on exceedingly modest scholarships; and those that also work at the university as teachers or research assistants complain about low-level salaries. There is no job security and/or social benefits; and, if they receive a scholarship – they are not allowed to work outside of the institution. In fact, financial difficulties consumed most of the discussion about the disadvantages of being a doctoral student.

One woman said: "The main issue that frightens me is the financial instability. Today there is a project and a salary, but no one knows about tomorrow. The supervisor can say that the project is over and you need to find other alternatives. I need social benefits but they do not exist. Financial instability is okay for a 20-year old child, not to you who have children and a family. The university gives very little to those who do research." Another stated: "They are ignorant of the fact that this is our bread. If we don't bring money home, we will have no bread." A third woman asked: "... how can it be that every 6 months my employment is opened up for discussion and I may find myself outside? That today I teach and correct exams and next semester I may not have a job?" A fourth student complained: "This is 5-days of work each week and even more, at least 8-hours a day on a hunger salary." A fifth woman told the group: "I want to get pregnant during my studies, but as you know there are no financial considerations in terms of paid maternity leave and conditions after the birth." And the last summarized: "We are at the

bottom of the food chain..." She explains that this is due to the fact that they are cheap labor, with no social benefits, which can be fired at any point. Finally, the women feel embarrassed to speak about money with their supervisors, as one explained: "I feel uncomfortable about discussing money with my supervisor; it will devalue my research if I talk about this because I am totally with the research."

### ***Conflicts between Academic Work and Family Life***

The second main difficulty that was discussed in the groups was conflicts between the demands of their academic work and the demands at home, particularly in regard to motherhood. The motherhood experience is described as meaningful and profoundly significant, but it creates a complex reality with inner conflicts and special needs that are often ignored by the system. The women suffer from both conflicting demands between family and professional life, but also from the ignorance of the academic system.

In regard to inner conflicts one woman said: "I want to be a good mother and a good researcher. It is hard. Instead of coming home at 6 p.m. -- I have to be in the lab conducting an experiment. A child wants to be with mom and the family, and if you do not have someone to help like a grandmother, it is very difficult and not always possible." Another told the group: "I walk around with guilt feelings and fear. I feel that I am missing out. I know I am supposed to enjoy, but I don't. My first birth was during my MA studies and I could not devote time to my child because I had to finish my thesis. Now I feel the same as a doctoral student with my second child. I know I should enjoy, but I am missing out again, I cannot stop this, I should not stop it."

In terms of the academic system, not only were pregnancy and giving birth not accommodated, they seemed to be regarded as an obstacle. One woman said: "...I got maternity leave but I did not know what it meant, because there are no regulations that cover your rights. No one knows what you can or can not do during maternity leave." The mother of a young child told the group: "I did not want to delay pregnancy, and I really want another child and my biological clock is ticking....but I also have to finish my studies. I already got leave during my previous pregnancy and I was told that during the doctoral studies you are only allowed one break. I want to enjoy the baby that is going to be the last one I have, to nurse him, to spend time with him, so I am delaying pregnancy until I get my PhD. This is something that the academic world does not grasp, children, nursing. Among all faculty members in physics, there is only one woman."

The need to take care of children in the afternoons and evenings also seems unimportant in the academic world, as one woman told the group: "I like to be able to come home at 4 p.m. and see my children, feed them and put them to sleep. But there are courses that are taught at terrible hours. This is a male attitude, men that manage the world and they are unaware that most child-care facilities are over at 4-5 p.m. and our day is over. I heard the sentence 'you have to find a solution to your children when they are sick.' This attitude is not only at the university. The country encourages us to have children, but after they are born, that is it! No financial or other accommodations. If you have more than two children in academia, you are told 'what are you doing? You are destroying your career.' I also heard someone say that there is no room for children in the doctoral studies, and there are professors who will not supervise a woman who has children."

This ignorance is expressed by the lack of proper child-care facilities: "There are no facilities for children here at the university. In another university where I did my MA studies there is a kindergarten that works during study hours, and after-school classes, so I could have been in the lab." And another added: "It is difficult to be in the lab doing an experiment when you have to stop and take your child for an after-school class. If there were facilities here at the university, it would have been much easier, and I could have done my research."

### ***Competing in a Male-Oriented Environment***

Overall, the women experience gender inequality and even gender discrimination. They indicated the small number of women as compared to the number of men in the various faculties. They talked about the difficulties that young female scientists face when they decide on focusing on "masculine" areas, such as receiving prestigious grants to do research, facing overt and covert messages from their supervisors and others. Many of them perceived their chances of getting an academic position as lower than that of male doctoral students, because the academic route is better suited to men than to women. For instance, the academic system requires a post-doc position abroad. Many women cannot take their families far away and instead tend to follow their husbands' career requirements; a delay in professional development due to birth and raising children is not accepted; and women, because of their small numbers, have to either excel more than men in order to be seen, or on the contrary, "keep a low profile."

On differential treatment, one woman said: "A woman has to be above others in her knowledge in order to be respected. But if you say something or question something, you need to explain and prove

yourself even more." Another woman told the group that she is the only female doctoral student in her department, and often her supervisor arranges meetings at 8-12 p.m.: "I am less spontaneous than others; I have to be organized and plan my schedule. I am the only woman there, the others simply disappear. This is a pity, because it is more fun talking to women than to men. They may disappear because they do not see the sense in it and the possibility for continuation."

The women talked about the double bind in which they find themselves: in order to succeed -- they must publish and get grants, but if they take leave for pregnancy and birth -- their academic progress is stopped: "I devote time to the children and it creates an unfair gap with men because when you apply for a position they count the number of papers you have published, but if you give birth you have less publications and your progress is impeded." Another one protested: "A man has no responsibilities; he can devote himself to science. He can sleep at the lab. I as a woman am afraid to leave the university alone at 10 at night, but the men work around the clock; they sleep in the lab and work during holidays as well. I feel uncomfortable. Of course they will progress faster. They don't have all the small things and headache of doing the laundry, cleaning and cooking. Until there is an overall revolution, they will always compare you to those who work with you and see who is faster."

Some of the women expressed their wish to bring about social change in which gender equality in the family and in the university will replace discrimination: "There must be a consensus that men may also take maternity leave and take care of children. If only the woman does all the work -- I see this as a failure; it means that the system is not working as it should with cooperation. Rules should also apply to the lab such as not sleeping there or working during holidays. If you don't come in during holidays, you shouldn't be exposed to questions 'where have you been?' 'Are you leaving already?' I have to report if I have a doctor's appointment, such an invasion. It feels like detention in the lab, which destroys the fun of research, and it is fun to do research."

Finally, some of the women attributed gender difficulties to the fact that most of their academic supervisors are males who do not understand women-related matters. They hypothesized that working with female supervisors would have been easier. A female supervisor could understand their needs as women and as mothers.

### ***Loneliness and a Lack of Support System***

Our impression was that overall the women face the academic world with little support. They struggle

with making a living, raising children, their status as researchers in a male-oriented environment, heavy schedules, insecurity regarding their employment in the present and the future, and the need to publish and succeed in academia – in essence alone. They express feelings of loneliness (particularly in the Humanities in which they work alone on texts), the lack of a support system to assist them in handling the conflicting demands they face, and a place in which they can be heard and get practical help.

One woman said: "We need an organization to which I can come as a mother with a financial or other problem, such as going to conferences, being fired, etc... I need a concrete solution, but also support and information." Another woman said: "I feel that most of the time I work alone as a soloist closed within 4 walls. I lack information and direction about scholarships, publications, etc." And another woman simply said: "A sense of being orphaned, no setting, no knowledge about the future, what will I be when I grow up? Will I continue in research? Will I have a job?"

The women, who have no other options on campus, turn to their academic supervisors for support, obtaining grants, arranging financial support to go to conferences, and dealing with the university bureaucracy: "I share everything with my supervisor; I am happy with my choice. He cares." Others realized that their supervisors are limited in their capacities to assist them: "It depends on the supervisor and his political power within and outside of the university. I sense that he does not have enough power, but I have no one else to turn to." And another woman talked about the need to be supported financially in order to travel abroad to conferences: "Our university supports only one conference annually, but in my area there are two important conferences each year; I participated in one and did not go to the other – and so lost an opportunity for publication."

### **Potential Solution**

We asked the women about their ideas for improvement and directions for gender equality in the academic world. Overall, they did not wish to have a support group or counseling but concrete help: "Talking is not enough at the level of survival that we are facing now." Instead, they wished for concrete and practical change. Here are their main ideas.

*Financial assistance:* Raise the sum amount of doctoral scholarships so that proper living could be possible, and provide larger scholarships to those who raise children; enable doctoral students who receive scholarships to work outside of the university as well; provide financial assistance for participating in conferences.

*Giving birth and raising children:* Allow those who give birth a longer time to complete studies; provide child care facilities on campus, such as day care that runs until 6 p.m., after-school programs, nursing places, and baby-sitting services; avoid scheduling classes and meetings in the evening hours

*Gender inequality:* Accept more women to faculties in which they are scarce (e.g., engineering) and provide them with scholarships; encourage women to participate in committees where important decisions are made; establish a fund to assist women and their families to go abroad for post-doc positions, or enable women to travel back and forth.

*Employment during their studies:* Treat the students as workers who have a defined status, and who are entitled to benefits and rights; and develop regulations regarding maternity leave, pregnancy, and working hours for mothers.

*Support system and loneliness:* Establish a doctoral student forum for women responsible for providing information about scholarships, financial opportunities, regulations, rights and benefits. Such a forum may also provide support, social gatherings, and reciprocal learning. Establish a mentoring system for each female student who wishes to be coached, so that she may be supported by another woman who is already successful in the academic world and knows how it works.

### **Summary and Discussion**

In this paper we described the main themes that were raised by female doctoral students in focus group discussions. We discussed the advantages and disadvantages of being a doctoral student, difficulties and barriers to success, and potential solutions. Although they come from different disciplines, are of different ages, some are married with children and others are single – they seem to share perceptions both of advantages and difficulties. The main advantage expressed by nearly all participants is the freedom to learn, develop, create, and explore new arenas, and "to be your own boss." But, this freedom comes with great difficulties. The financial struggle is common to all. The scholarships are too modest, salaries and employment conditions on-campus are limited, benefits and workers' rights are virtually non-existent, and the student depends on her academic supervisor and his/her research fund to survive.

Students who are also mothers face tremendous difficulties: inner conflicts between their wishes to provide for their children and the wish to continue with their academic work; the academic system's disregard for their needs during pregnancy, childbirth, maternity leave, raising children; inequality in house work and child care; and even, at times, an atmosphere of condemnation towards their roles as



mothers. A lack of institutional support on campus, such as child care and after-noon programs for children, makes their struggle even harder. Yet, they need to compete with doctoral students who do not share these obligations.

The male-oriented environment in the academic world makes it harder to feel contained and supported. In many faculties there are scarcely any women on staff; supervisors are usually men, who do not necessarily understand gender issues; and there are no special considerations for women and/or mothers. Thus, a sense of loneliness, a lack of support, and insecurity about the future is widespread.

What can and should be done? The women ask for concrete support: decent scholarships, rights and benefits as teachers and research assistants, institutional recognition expressed by regulations in regard to pregnancy, childbirth, and raising children during their studies, travel money for conferences, and an information and support center for women. They rightly understand that such change will not occur unless "it comes from above." That is, from the top university officials and management. Unless awareness of the condition of women in academia and their unique predicament is raised – no real change can be expected.

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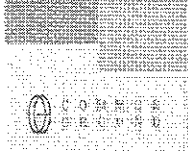
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